

SERVICE MANUAL

NAD

SERVICE SAFETY PRECAUTIONS (UL)

1. Use exact replacement parts for critical locations marked “”
2. Return lead dress to original position and re-install protective covers.
3. Before returning to customer, test for shock hazard; use either method A or B:
 - A. Leakage test “cold”:
 1. Unplug the AC cord; turn power switch ON.
 2. Connect one lead of High Voltage Insulation Tester to both prongs of the AC plug.
 3. Touch other lead to all exposed metal parts.
 4. Impedance measurement must be 0.3-5.0 Megohms.
 - B. Leakage test, “live”:
 1. Plug unit directly into the AC outlet; do not use isolation transformer.
 2. Connect one lead of the Leakage Current Tester to earth ground.
 3. Touch other lead to all exposed metal parts.
 4. Leakage measurement must be less than 0.5 milliamps.

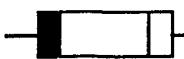
AV716

RECEIVER

AV716
RECEIVER

SERVICE SAFETY PRECAUTIONS

1. Replacing the fuses



This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating refer to the marking adjacent to the symbol.

Circuit No.	Part No.	Description
F901	252166Y	6.3A-UL/T-237, Primary <AH>
F902	252076 or 252076Y	3.15A-SE-EAK, Primary <B1><C>
F903	252075 or 252075Y	2.5A-SE-EAK, AC outlet <C>
F911	252166Y	6.3A-UL/T-237, Secondary <AH>
	252079	6.3A-SE-EAK, Secondary <B1><C>
F912	252166Y	6.3A-UL/T-237, Secondary <AH>
	252079	6.3A-SE-EAK, Secondary <B1><C>

NOTE: <AH>: U.S.A., Canadian model only
: U.K. model only
<B1>: Australian model only
<C>: European model only

2. Memory preservation

This unit does not require memory preservation batteries. A built-in memory power back-up system preserves contents of the memory during power failures and even when the unit is unplugged. The unit must be plugged in and the power switch turned on and off once in order to charge the back-up system. Note that since this is not a permanent memory the power switch must be turned on and off a few times each month to keep the back-up system operative. The period of time during which memory contents are preserved after power has last been turned off varies depending on climate and placement of the unit. On average, memory contents are protected over a period of 3 to 4 weeks (a minimum of 2 weeks) after the last time power has been turned off. This period is shorter when the unit is exposed to very high humidity or used in an area with an extremely humid climate.

3. Safety-check out

(Only U.S.A. model)

After correcting the original service problem perform the following safety check before releasing the set to the customer.

Connect the insulating-resistance tester between the plug of power supply cord and the screw on the back panel.
Specifications : 3.3 Mohm \pm 10% at 500V.

ALIGNMENT METHOD

IMPORTANT

The tape path (heads, tape guides, capstan, pinch roller) should be cleaned and degaussed before alignment.

This tape recorder is designed to work well with a variety of tapes, however, maximum performance will be obtained with recommended tapes or similar tape formulations.

Recommended tapes	For North America	For Europe-DIN
Type I	Maxell UDS-I	Maxell UD-I, BASF TP18 no, R723DG
Type II	Maxell XL-II	Maxell XL-II, Teac MTT-5561
Type IV	Maxell MX	Maxell MX, Maxell MX 422

All adjustments done with Dolby NR OFF, MPX filter (on back panel) OFF and BIAS FINE ADJUST in center position.

DOLBY NR level 200 nWb/m = 245 mV RMS on testpoints TP001(L) and TP002(R)/TP003(L) and TP004(R) (PLAYBACK/RECORDING) on Main PCB; approximately 505 mV at line outputs.

1. TAPE SPEED

Connect one output to Wow and Flutter Meter or Frequency Counter, Play speed test tape TEAC MTT-111 = 3 kHz or TEAC MTT-211 = 3.15 kHz and adjust SVR851, for correct reading on Wow and Flutter Meter or Frequency Counter.(See Fig. A)

Tolerance: $\pm 1\%$

2. AZIMUTH

Connect VTVM's and/or Oscilloscope to outputs. Set tape selector to normal and start playing Azimuth tape TEAC MTT-113 or MTT-114. Rotate azimuth screw for maximum output and/or maximum and in phase on Oscilloscope. Reseal adjustment screw with nail polish or similar (do not use glue).(See Fig. B)

3. PLAYBACK EQ

THIS ADJUSTMENT IS NOT NEEDED UNLESS THE HEAD HAS BEEN REPLACED OR REPAIR HAS BEEN DONE IN HEADAMP CIRCUIT.

Play level/azimuth tape TEAC MTT-256 and adjust SVR001(L) and SVR002(R) for identical output at 315/6300 Hz (MTT-255) or 250/6300 Hz (MTT-256).

Tolerance: ± 0.5 dB

4. PLAYBACK HIGH FREQUENCY EQ

THIS ADJUSTMENT SHOULD BE DONE ONLY WHEN HEAD HAS BEEN REPLACED.

Play frequency response tape TEAC MTT-256 or MTT-256U and check playback level at 14 kHz. Before adjust, cut the center of jumper leads E001(L) and E002(R). Adjust by disconnecting R001(L) and R002(R) if 14 kHz is too low and connecting E001(L) and E002(R) if 14 kHz is too high. Leave same component values in both channels.

Tolerance: ± 1 dB

5. PLAYBACK LEVEL

Connect VTVM to testpoints. Play Dolby NR level tape TEAC MTT-150 and adjust SVR003(L) and SVR004(R) for 245 mV RMS at testpoint TP001(L) and TP002(R) on Main PCB.

Tolerance: ± 2.5 mV RMS

Output should be approximately 505 mV RMS.

6. METER LEVEL

Play Dolby NR level tape MTT-150 and adjust SVR501(L) and SVR502(R) so that 0 dB LED's just turn on.

7. BIAS TRAP

Insert a blank type I tape and start recording. Turn record level all the way down and set tape selector to type IV position. Connect VTVM's and/or oscilloscope probe to testpoint MP201-3(L) and adjust F301 for minimum. Connect probe to MP201-1 and adjust F302 for minimum.

Tolerance: Less than 300 mV RMS.

8. RECORD LEVEL

Set tape selector to type IV tape. Connect audio oscillator to line inputs, turn record levels to maximum (clockwise). Adjust audio oscillator frequency to 400 Hz and output so that VTVM's read 30 – 40 mV. (Use a convenient reference point on the VTVM's).

Reset tape counter to 0 and release pause to start recording. Record for approximately 5 seconds, rewind to 0 on tape counter and play back while observing the VTVM's. The VTVM's should indicate the same level as when the tape was recorded. Adjust SVR005(L) and SVR006(R) if necessary and repeat the record / play procedure until the readings are the same.

Tolerance: ± 0.5 dB from record level. Less than 0.5 dB difference between channels.

9. BIAS ADJUST TYPE I TAPE (NORMAL)

Set audio generator to 1.2 kHz without changing output level. Reset tape counter to 0 and start recording. After 5 seconds change audio generator frequency to 12 kHz (do not stop the machine or change levels) and continue recording for another 5 seconds. Stop and rewind to 0 on tape counter. Play back while observing VTVM's. There should be no level difference between the 1.2 kHz and the 12 kHz tone when played back. If 12 kHz is different in level for 1.2 kHz, adjust SVR301(L) and SVR302(R) and repeat the record / play procedure until both frequencies play back at same level.

Tolerance: ± 0.5 dB

WARNING: Greater tolerance will grossly affect the Dolby NR tracking and especially the Dolby C tracking.

Record level (step 8) should be checked and if necessary adjusted.

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SPECIFICATIONS

AMPLIFIER SECTION

POWER OUTPUT:

Stereo Mode:	2 x 80 Watts cont. into 8 ohms 2 x 115 Watts cont. 4 ohms, 1 kHz
Surround or Multi Source Mode	3 x 55 Watts (left, right, center) 2 x 20 Watts Rear or Remote Channels

Total Harmonic Distortion 0.08% at rated power (Front)

IM Distortion 0.08% at rated power (Front)

Damping factor 60 at 8 ohms (Front)

Sensitivity and Impedance: Phono: 2.5 mV/50 kohms
Line: 150 mV/50 kohms

Frequency Response 20 to 30,000 Hz, ± 1 dB

RIAA Deviation 20 to 20,000 Hz, ± 1 dB

Tone Controls Bass: ± 10 dB at 100Hz

Treble: ± 10 dB at 10,000Hz

Signal to Noise Ratio Phono: 80 dB (IHF A, 5mV input)
Line: 100 dB (IHF A)

TUNER SECTION

FM:

Input Sensitivity 1 μ V

Total Harmonic Distortion Mono: 0.15%

Stereo: 0.25%

Stereo Separation 45 dB at 1 kHz

Signal to Noise Ratio Mono: 73 dB

Stereo: 67 dB

AM:

Usable Sensitivity 30 μ V

Signal to Noise Ratio 40dB

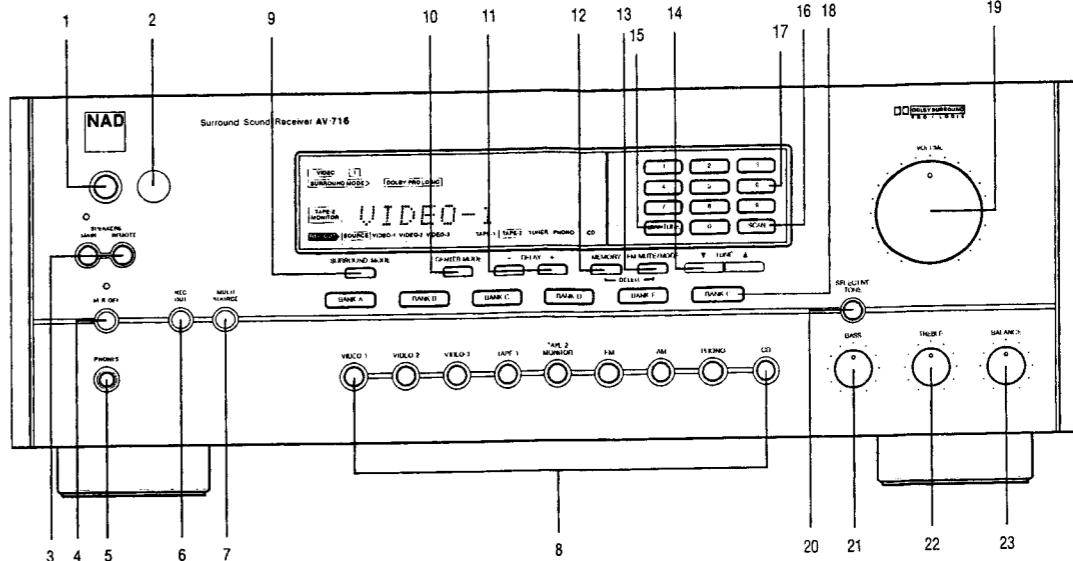
Total Harmonic Distortion 0.7%

Dimensions in mm (W x H x D) 455 x 168 x 375

Net Weight 13.2 kg/29.1 lbs.

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE

FRONT PANEL CONTROLS

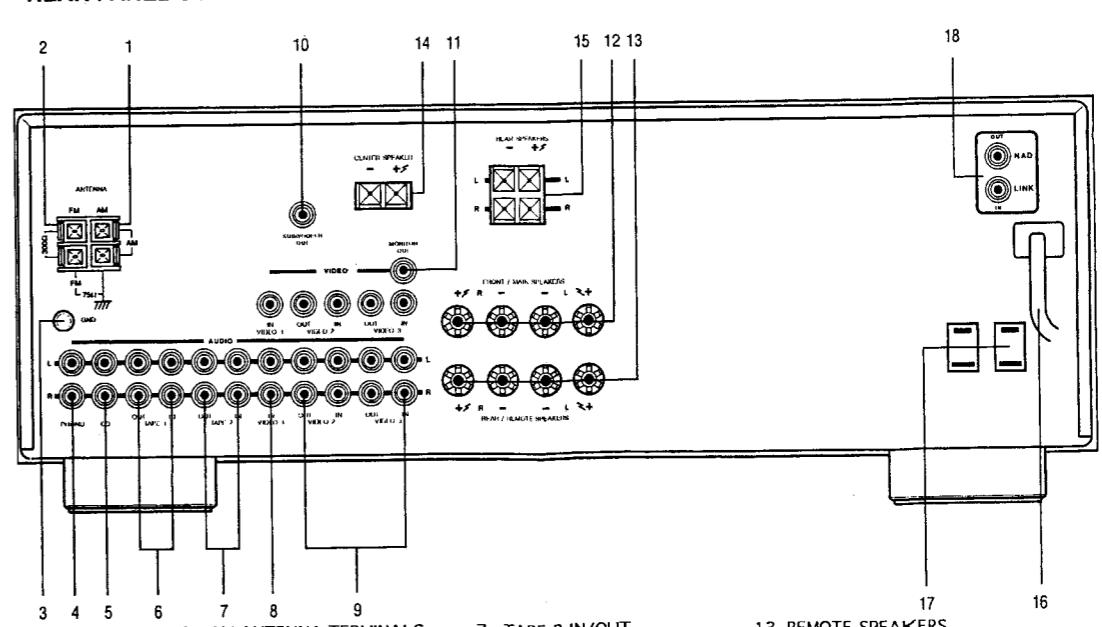


- POWER
- REMOTE CONTROL SENSOR
- SPEAKERS MAIN & REMOTE SELECTORS
- MR OFF
- PHONES
- REC OUT
- MULTI SOURCE
- SOURCE SELECTORS
- SURROUND MODE
- CENTER MODE
- DELAY TIME +/-
- MEMORY
- FM MUTE/MODE
- TUNE ▲AND▼
- DIAL TUNE
- SCAN
- NUMERIC KEY-PAD 0 to 9
- BANK A to F
- VOLUME
- SELECTIVE TONE
- BASS
- TREBLE
- BALANCE

 The lightning flash with arrowhead, within an equilateral triangle is intended to alert the user of the presence of unisolated "dangerous voltage" within the product's enclosure; that may be of sufficient magnitude to constitute a risk of electric shock to persons.

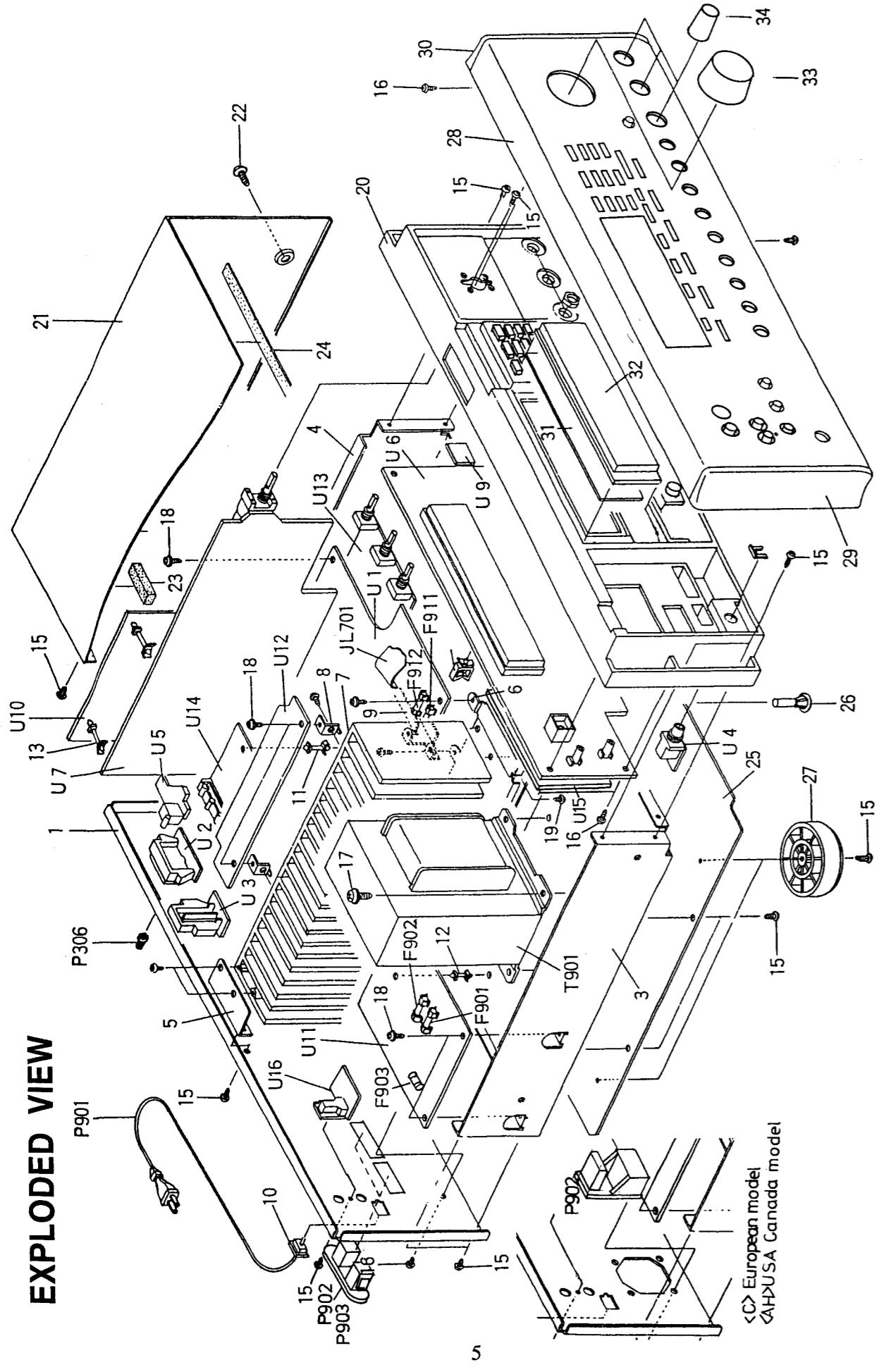
 The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance

REAR PANEL CONNECTIONS

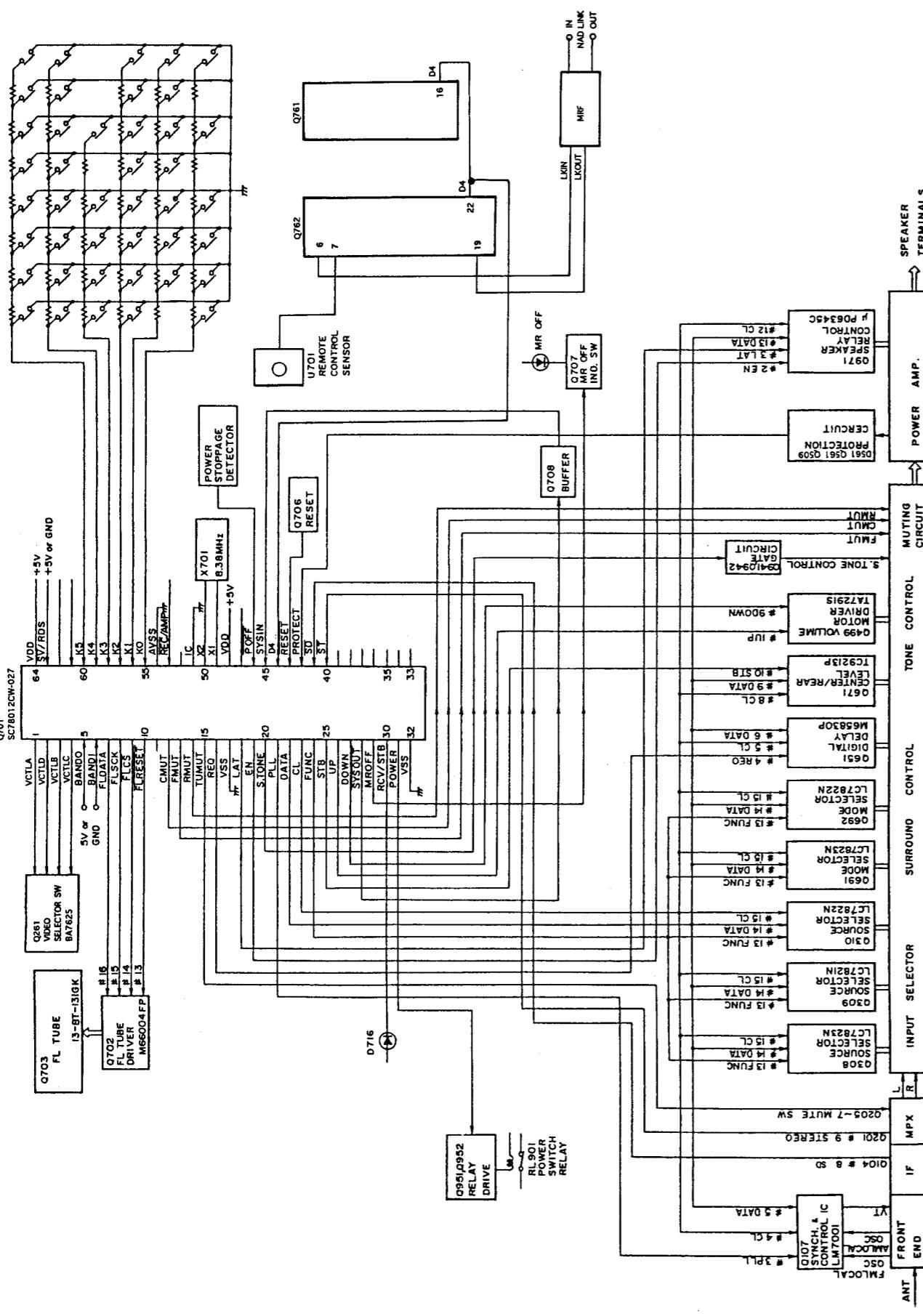


- AM ANTENNA TERMINALS
- FM ANTENNA INPUT
- PHONO GROUND
- PHONO INPUT
- CD INPUT
- TAPE-1 IN/OUT
- TAPE-2 IN/OUT
- VIDEO-1 INPUT
- VIDEO-2 & VIDEO-3 IN/OUT
- SUBWOOFER OUT
- MONITOR OUT
- MAIN SPEAKERS
- REMOTE SPEAKERS
- CENTER SPEAKER
- REAR SPEAKERS
- AC POWER CORD
- AC OUTLETS
- NAD-LINK IN/OUT

EXPLODED VIEW



MICROPROCESSOR DESCRIPTIONS



Terminal Description

Pin No.	Function	I/O	Description												
1	VCTLA	O	Video signal control A output terminal.												
2	VCTLB	O	Video signal control B output terminal.												
3	VCTLB	O	Video signal control B output terminal.												
4	VCTL	O	Video signal control C output terminal.												
5	BAND 0	I	Initializing input terminal for FM/AM band region.												
6	BAND 1	I													
7	FLDATA	O	Connect to the terminal SDATA of Fluorescent tube driver M66004FP. (Q702)												
8	FLSCK	O	Connect to the terminal SCK of Fluorescent tube driver M66004FP.												
9	FLCS	O	Connect to the terminal CS of Fluorescent tube driver M66004FP.												
10	FLRESET	O	Connect to the terminal RESET of Fluorescent tube driver M66004FP.												
11	PLAYER		Not used.												
12	CMUT	O	Muting output terminal for the center amplifier.												
13	FMUT	O	Muting output terminal for the front amplifier.												
14	RMUT	O	Muting output terminal for the rear amplifier.												
15	TUMUT	O	Muting output terminal for the tuner.												
16	REQ	O	Connect to the terminal REQ of Digital delay M65830P.(Q651)												
17	VSS	-	Ground terminal												
18	LAT	O	Connect to the terminal LAT of Output extended IC μ PD6345C.(Q971)												
19	EN	O	Connect to the terminal EN of Output extended IC μ PD6345C.												
20	S.TONE	O	Selective tone control output terminal.												
21	PLL	O	Connect to the terminal CE of PLL IC LM7001.(Q107)												
22	DATA	O	Connect to the terminal DI of Analog switches LC7821N,LC7822N, and LC7823N, the terminal DATA of PLL IC LM7001, the terminal DATA of Electro volume TC9213P, the terminal DATA of Digital delay M65830P, and the terminal SIN of Output extended IC μ PD6345C.												
23	CL	O	Connect to the terminal CL of Analog switches LC7821N,LC7822N, and LC7823N, the terminal CL of PLL IC LM7001, the terminal CK of Electro volume TC9213P, the terminal SCK of Digital delay M65830P, and the terminal SCK of Output extended IC μ PD6345C.												
24	FUNC	O	Connect to the terminal CE of Analog switches LC7821N,LC7822N, and LC7823N. (Q309,Q310,Q692,Q308 and Q691)												
25	STB	O	Connect to the terminal STB of Electro volume TC9213P. (Q671)												
26	UP	O	Volume UP/DOWN control output. (Q499) <table border="1" style="margin-left: 20px;"> <tr> <td>Operation</td><td>#27</td><td>#26</td></tr> <tr> <td>Stop</td><td>H</td><td>H</td></tr> <tr> <td>Volume up</td><td>L</td><td>H</td></tr> <tr> <td>Volume down</td><td>H</td><td>L</td></tr> </table>	Operation	#27	#26	Stop	H	H	Volume up	L	H	Volume down	H	L
Operation	#27	#26													
Stop	H	H													
Volume up	L	H													
Volume down	H	L													
27	DOWN	O													
28	SYSOUT	O	System code output terminal.												

VIDEO SIGNAL CONTROL OUTPUT

Input Selection

#1	#3	SOURCE
L	L	VIDEO-3
H	L	VIDEO-2
L	H	
H	H	VIDEO-1

Recording Selector

#4	#2	SOURCE
L	L	VIDEO-3
H	L	VIDEO-2
L	H	
H	H	VIDEO-1
Same as #1	Same as #3	Other position
Same as #1	Same as #3	Multi mode

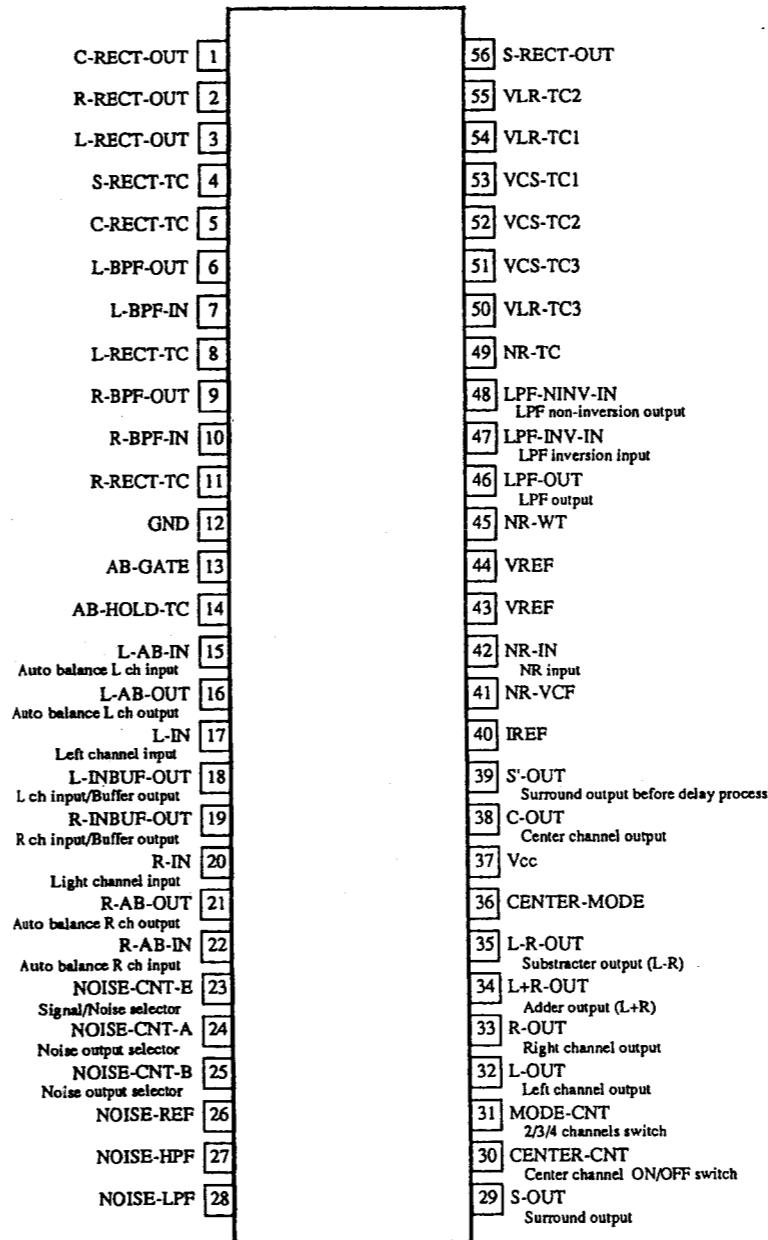
IC BLOCK DIAGRAMS AND DESCRIPTION

Pin No.	Function	I/O	Description
29	MR	O	MULTI ROOM indicator control output.
30	STBY/RECV	O	STAND-BY/RECEIVED indicator control output.
31	POWER	O	Power switch relay control output.
32	VSS	-	Ground terminal.
33			Not used.
34			Not used.
35			Not used.
36			Not used.
37			Not used.
38			Not used.
39			Not used.
40	ST	I	Stereo detection input terminal.
41	SD	I	Broadcast detection input terminal.
42	PROTECT	I	Protection circuit operation detection input terminal.
43	RESET	I	System reset input terminal.
44	REMIN	I	Remote control signal input terminal.
45	SYSIN	I	System code input terminal.
46	POFF	I	Detection input terminal for the stoppage of electric current.
47			Not used.
48	VDD		Power supply terminal.(+5V)
49	X2		Ceramic resonator connection terminal for the main system clock .
50	X1		Connect the ceramic resonator 8.38 MHz.
51	IC		Connect to the ground terminal.
52			Not used.
53	REC/AMP		Connect to the ground terminal.
54	AVSS		Ground terminal of A/D converter.
55	K0	I	Operation key connection terminals.
56	K1	I	
57	K2	I	
58	K3	I	
59	K4	I	
60	K5	I	
61			Not used.
62	MODE	I	Connect to the ground terminal.
63	SV/RDS		Analogue power supply terminal of A/D converter. (+5V)
64	AVREF		Reference voltage input terminal of A/D converter.

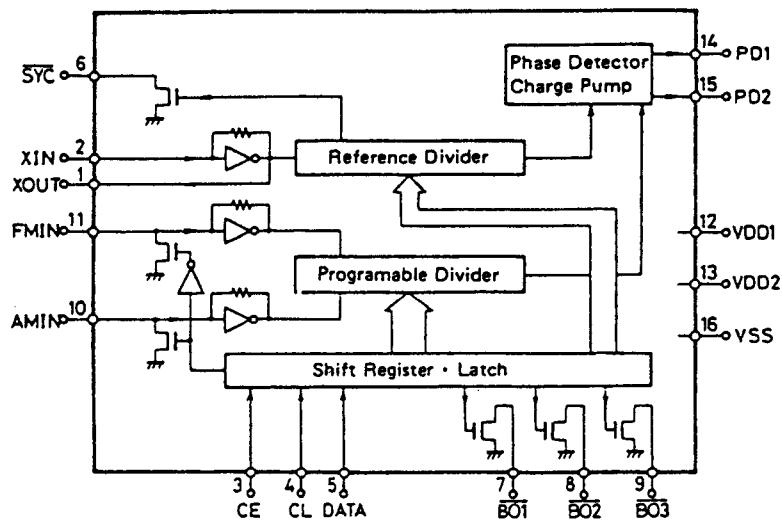
Initialing Input

#5,#6					
BAND 1	BAND 0	Regin	Band	Frequency Range	Channel Space
0	0	U.S.A.	FM	87.50~108.00MHz	50kHz
			AM	530~1710kHz	10kHz
0	1	European	FM	87.50~108.00MHz	50kHz
			AM	522~1611kHz	9kHz

Q602
NJM2177L / M69032P (Dolby Pro Logic)

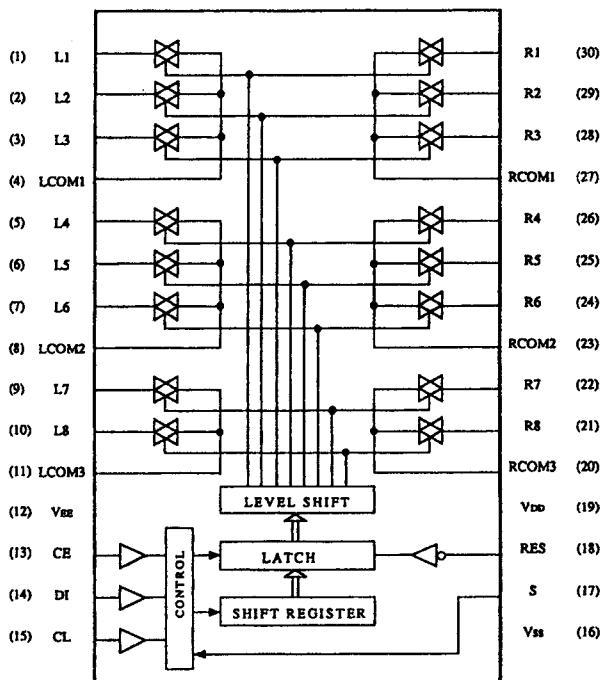


Q107 LM7001 (PLL Synthesizer and Controller)



Pin No.	Terminal	Description
1	XOUT	Connect to the 7.2 MHz crystal oscillator.
2	XIN	
3	CE	Chip enable terminal. Connect to the PLL terminal of microprocessor.
4	CL	Serial clock input terminal. Connect to the CLOCK terminal of microprocessor.
5	DATA	Serial data input terminal. Connect to the DATA terminal of microprocessor.
6	SYN	Not used.
7	AUTO/MONO	AUTO/MONO selection output terminal. "L" when AUTO.
8	FM	FM band control output terminal. "L" when FM.
9	AM	AM band control output terminal. "L" when AM.
10	AMIN	AM local oscillator input terminal.
11	FMIN	FM local oscillator terminal.
12	VDD 1	Power supply terminal for back-up.
13	VDD 2	Power supply terminal.
14	PD1	Charge pump output of the phase detector which constitutes the PLL. High level is output when the divided local oscillator frequency is high than the reference frequency.
15	PD2	In the opposite case, low level is output. Floating occurs when the frequencies matched. The output is applied to the variable capacitor diode in the local oscillator through the low pass filters.
16	Vss	Ground terminal.

Q310, Q692
LC7822N (Analogue switch)



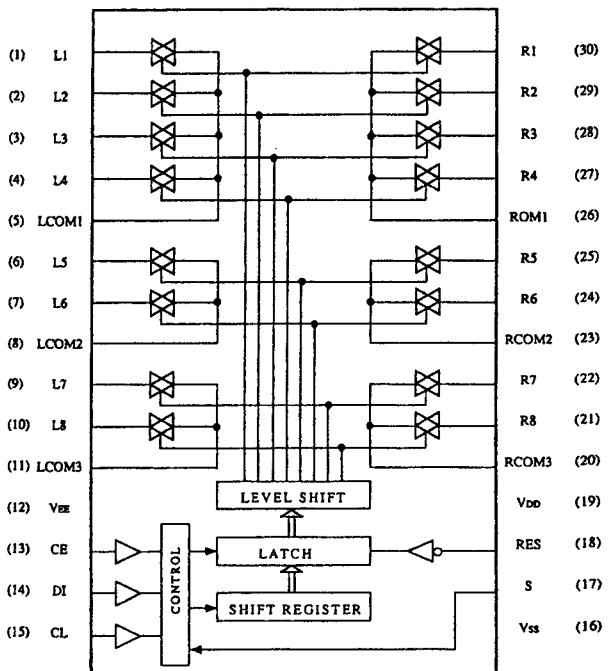
Q310

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	VIDEO-3' REC		16	VEE	Ground terminal
2	VIDEO-2'		17	S	Selector terminal
3	VIDEO-2' REC		18	RES	Reset terminal. When power is turned on, the condition of the analogue switch is not determined, but when this terminal is "L", all analogue switches are off.
4	LCOM1		19	VDD	Power supply terminal (+15V)
5	VIDEO-2 MON		20	RCOM3	Input/output terminals of VIDEO-3 signal of right channel.
6	VIDEO-2		21	VIDEO-3	Control the analogue switch at the serial data.
7	VIDEO-3 MON		22	VIDEO-3'	Input/output terminals of audio signal of right channel.
8	LCOM2		23	RCOM2	Control the analogue switch at the serial data.
9	VIDEO-3'		24	VIDEO-3 MON	
10	VIDEO-3		25	VIDEO-2	
11	LCOM3		26	VIDEO-2 MON	
12	Vss	Negative power supply terminal (-15V)	27	RCOM1	Input/output terminals of multi source of right channel.
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.	28	VIDEO-2' REC	Control the analogue switch at the serial data.
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	29	VIDEO-2'	
15	CL	Serial clock input terminal. Connect to the terminal CL of the microprocessor.	30	VIDEO-3' REC	

Q692

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	SURROUND		16	VEE	Ground terminal
2	NC		17	S	Selector terminal
3	MULTI		18	RES	Reset terminal. When power is turned on, the condition of the analogue switch is not determined, but when this terminal is "L", all analogue switches are off.
4	LCOM1		19	VDD	Power supply terminal (+15V)
5	MULTI		20	RCOM3	
6	HALL		21	DOLBY	
7	DOLBY		22	DOLBY	
8	LCOM2		23	RCOM2	Input/output terminals of audio signal of right channel.
9	DOLBY		24	DOLBY	Control the analogue switch at the serial data.
10	DOLBY		25	HALL	
11	LCOM3		26	MULTI	
12	Vss	Negative power supply terminal (-15V)	27	RCOM1	
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.	28	MULTI	
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	29	NC	
15	CL	Serial clock input terminal. Connect to the terminal CL of the microprocessor.	30	SURROUND	

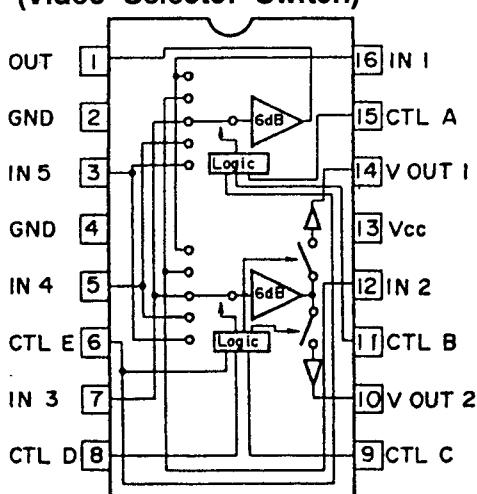
Q309
LC7821N (Analogue switch)



Q309

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	VIDEO-1'		16	VEE	Ground terminal
2	TUNER'		17	S	Selector terminal
3	TAPE-1'		18	RES	Reset terminal. When power is turned on, the condition of the analogue switch is not determined, but when this terminal is "L", all analogue switches are off.
4	TAPE-1' REC		19	VDD	Power supply terminal (+15V)
5	LCOM1		20	RCOM3	Input/output terminals of audio signal of right channel.
6	TAPE-1 MON	Input/output terminals of TAPE-1 signal of left channel.	21	VIDEO-1	Control the analogue switch at the serial data.
7	TAPE-1		22	TUNER	
8	LCOM2	Control the analogue switch at the serial data.	23	RCOM2	Input/output terminals of TAPE-1 signal of right channel.
9	TUNER	Input/output terminals of audio signal of left channel.	24	TAPE-1	
10	VIDEO-1		25	TAPE-1 MON	Control the analogue switch at the serial data.
11	LCOM3	Control the analogue switch at the serial data.	26	RCOM1	
12	Vss	Negative power supply terminal (-15V)	27	TAPE-1' REC	Input/output terminals of multi source of right channel.
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.	28	TAPE-1'	
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	29	TUNER'	Control the analogue switch at the serial data.
15	CL	Serial clock input terminal. Connect to the terminal CL of the microprocessor.	30	VIDEO-1'	

Q251
BA7625 (Video Selector Switch)



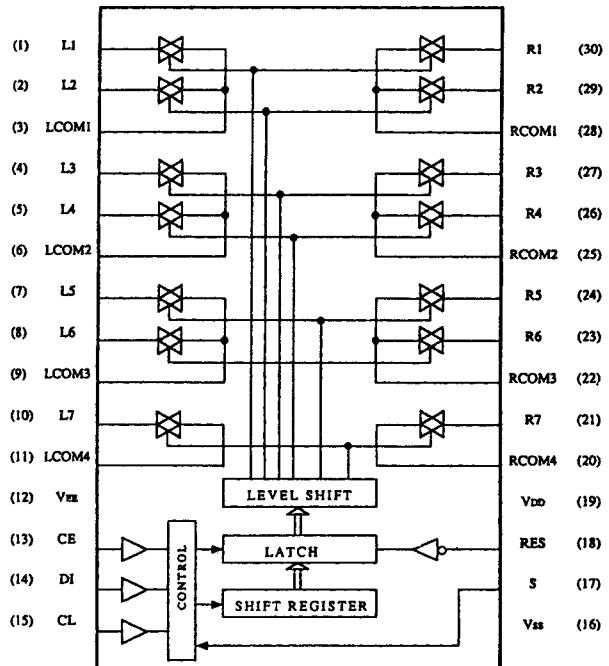
#15	#11	#6	#1
A	B	E	MONITOR OUT
L	L	X	IN1
H	L	X	IN2
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

X:Don't care

#9	#8	#6	#14
C	D	E	VOUT 1
L	L	X	
H	L	X	IN2
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

#15	#11	#6	#10
A	B	E	VOUT 2
L	L	X	IN1
H	L	X	
L	H	X	IN3
H	H	L	IN4
H	H	H	IN5

Q308, Q691
LC7823N (Analogue switch)



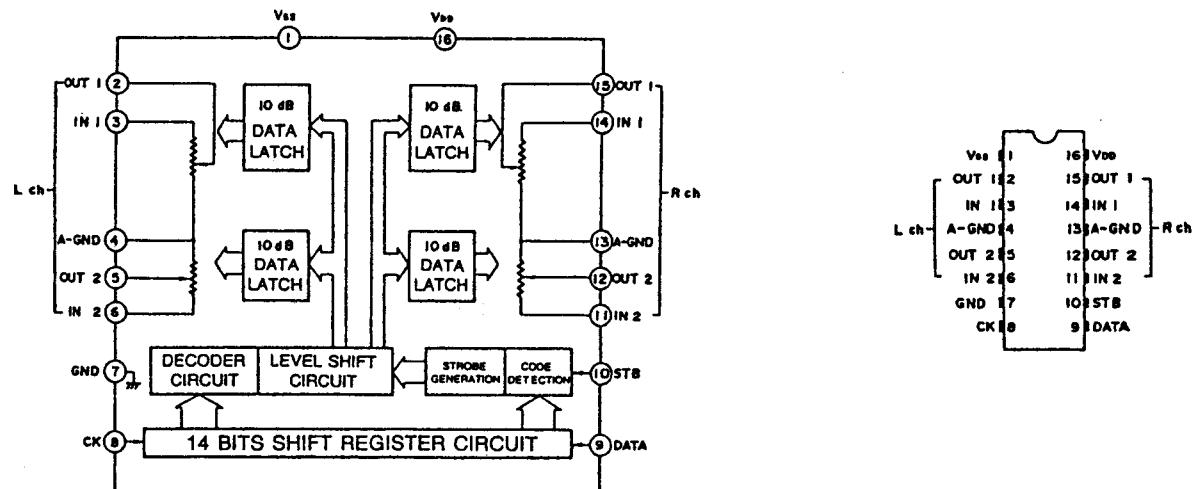
Q308

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	PHONO'	Input/output terminals of multi source of left channel.	16	V _{EE}	Ground terminal
2	CD'	Control the analogue switch at the serial data.	17	S	Selector terminal
3	LCOM1		18	RES	Reset terminal. When power is turned on, the condition of the analogue switch is not determined, but when this terminal is "L", all analogue switches are off.
4	CD		19	V _{DD}	Power supply terminal (+15V)
5	PHONO	Input/output terminals of audio signal of left channel.	20	RCOM4	Input/output terminals of multi source of right channel.
6	LCOM2	Control the analogue switch at the serial data.	21	TAPE-2'	Control the analogue switch at the serial data.
7	SOURCE		22	RCOM3	
8	TAPE-2	Input/output terminals of multi source of left channel.	23	TAPE-2	Input/output terminals of audio signal of right channel.
9	LCOM3	Control the analogue switch at the serial data.	24	SOURCE	Control the analogue switch at the serial data.
10	TAPE-2'		25	RCOM2	
11	LCOM4	Input/output terminals of multi source of left channel.	26	PHONO	
12	V _{SS}	Control the analogue switch at the serial data.	27	CD	
13	CE	Negative power supply terminal (-15V)	28	RCOM1	Input/output terminals of multi source of right channel.
14	DI	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.	29	CD'	Control the analogue switch at the serial data.
15	CL	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	30	PHONO'	

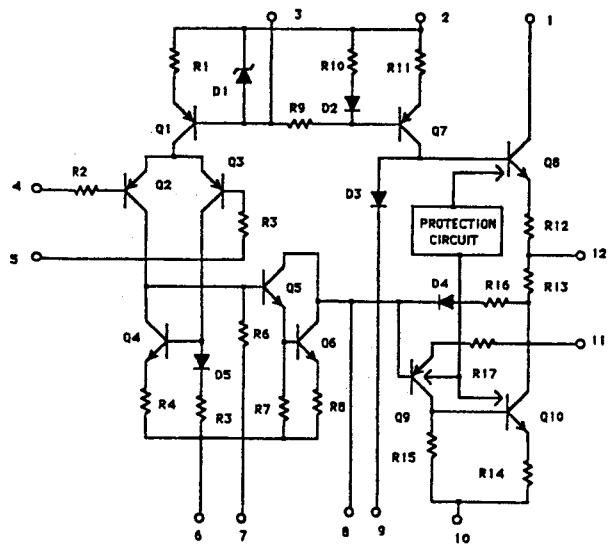
Q691

Pin No.	Terminal	Description	Pin No.	Terminal	Description
1	DOLBY	Input/output terminals of digital delay signal when surround mode.	16	V _{EE}	Ground terminal
2	HALL		17	S	Selector terminal
3	LCOM1	Control the analogue switch at the serial data.	18	RES	Reset terminal. When power is turned on, the condition of the analogue switch is not determined, but when this terminal is "L", all analogue switches are off.
4	NORMAL		19	V _{DD}	Power supply terminal (+15V)
5	WIDE		20	NC	
6	LCOM2		21	NC	
7	TEST B	Mode select terminal when Dolby Pro Logic.	22	NC	
8	TEST A	Control the analogue switch at the serial data.	23	NC	
9	LCOM3		24	NC	
10	TEST		25	NC	
11	LCOM4		26	NC	
12	V _{SS}	Negative power supply terminal (-15V)	27	NC	
13	CE	Chip enable terminal. Connect to the terminal FUNC of the microprocessor.	28	NC	
14	DI	Serial data input terminal. Connect to the terminal DATA of the microprocessor.	29	NC	
15	CL	Serial clock input terminal. Connect to the terminal CL of the microprocessor.	30	NC	

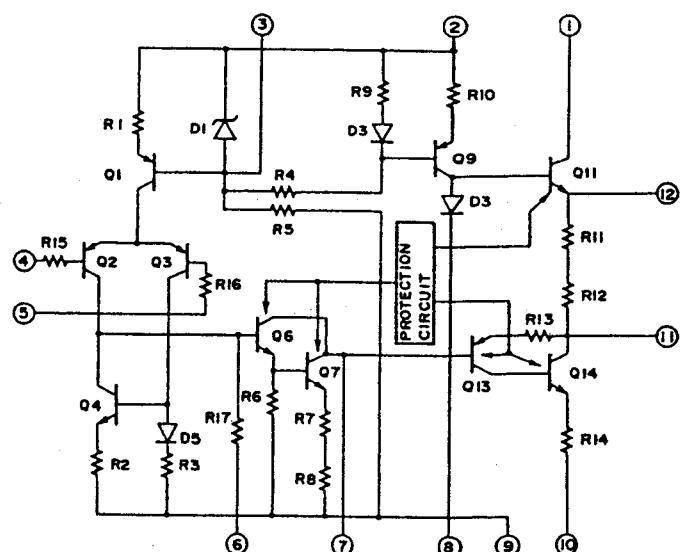
**Q671
TC9213P (Electro Volume)**



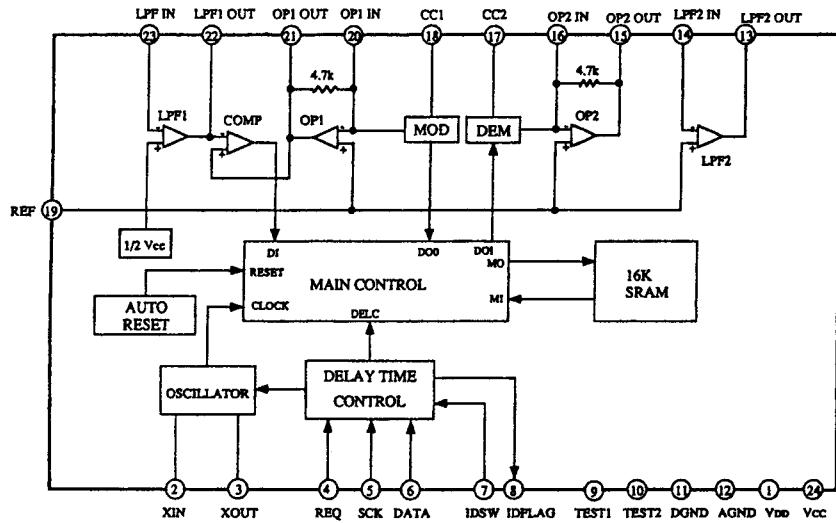
**Q501, Q502, Q541
μ PC1298V (Power Amplifier Driver)**



**Q571, Q572
μ PC1225H (Power Amplifier Driver)**



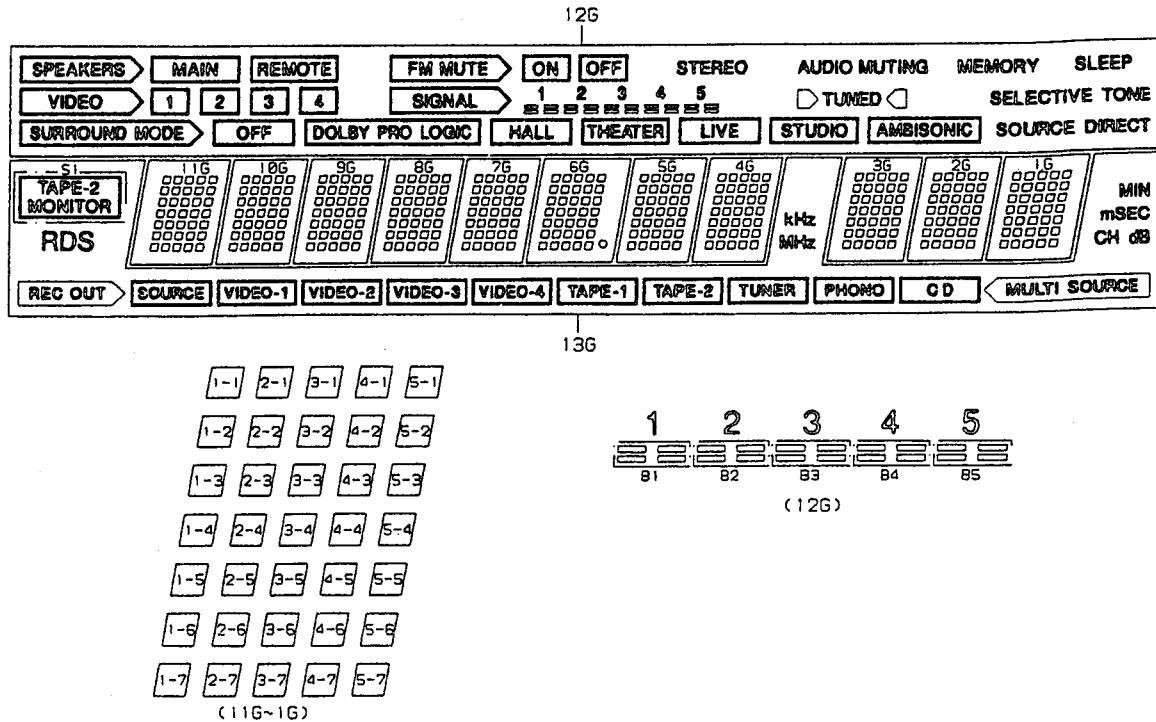
Q651
M65830P (Digital Delay)



Pin No.	Mark	Function	I/O	Description
1	VDD	Digital power supply	-	
2	XIN	Resonator input	I	Connect the 2MHz ceramic resonator
3	XOUT	Resonator output	O	
4	REQ	Request	I	Data request input
5	SCK	Shift lock	I	Serial data shift clock input
6	DATA	Data	I	Serial data input
7	IDSW	ID switch	I	External input of 4th bit of ID code
8	IDFLAG	ID flag	O	Data input confirmation pulse and serial data output
9	TEST1	Test 1	-	Normal mode when low level
10	TEST2	Test 2	-	Normal mode when low level
11	D GND	Digital ground	-	
12	A GND	Analog ground	-	
13	LPF2 OUT	LPF filter 2 output	O	
14	LPF2 IN	LPF filter 2 input	I	
15	OP2 OUT	Operation amp. 2 output	O	
16	OP2 IN	Operation amp. 2 input	I	
17	CC2	Current control 2	-	Demodulation ADM control
18	CC1	Current control 1	-	Modulation ADM control
19	REF	Reference	-	Analog reference voltage=1/2VCC
20	OP1 IN	Operation amp. 1 input	I	
21	OP1 OUT	Operation amp. 1 output	O	
22	LPF1 OUT	LPF filter 1 output	O	
23	LPF1 IN	LPF filter 1 input	I	
24	VCC	Analog power supply	-	

Q703

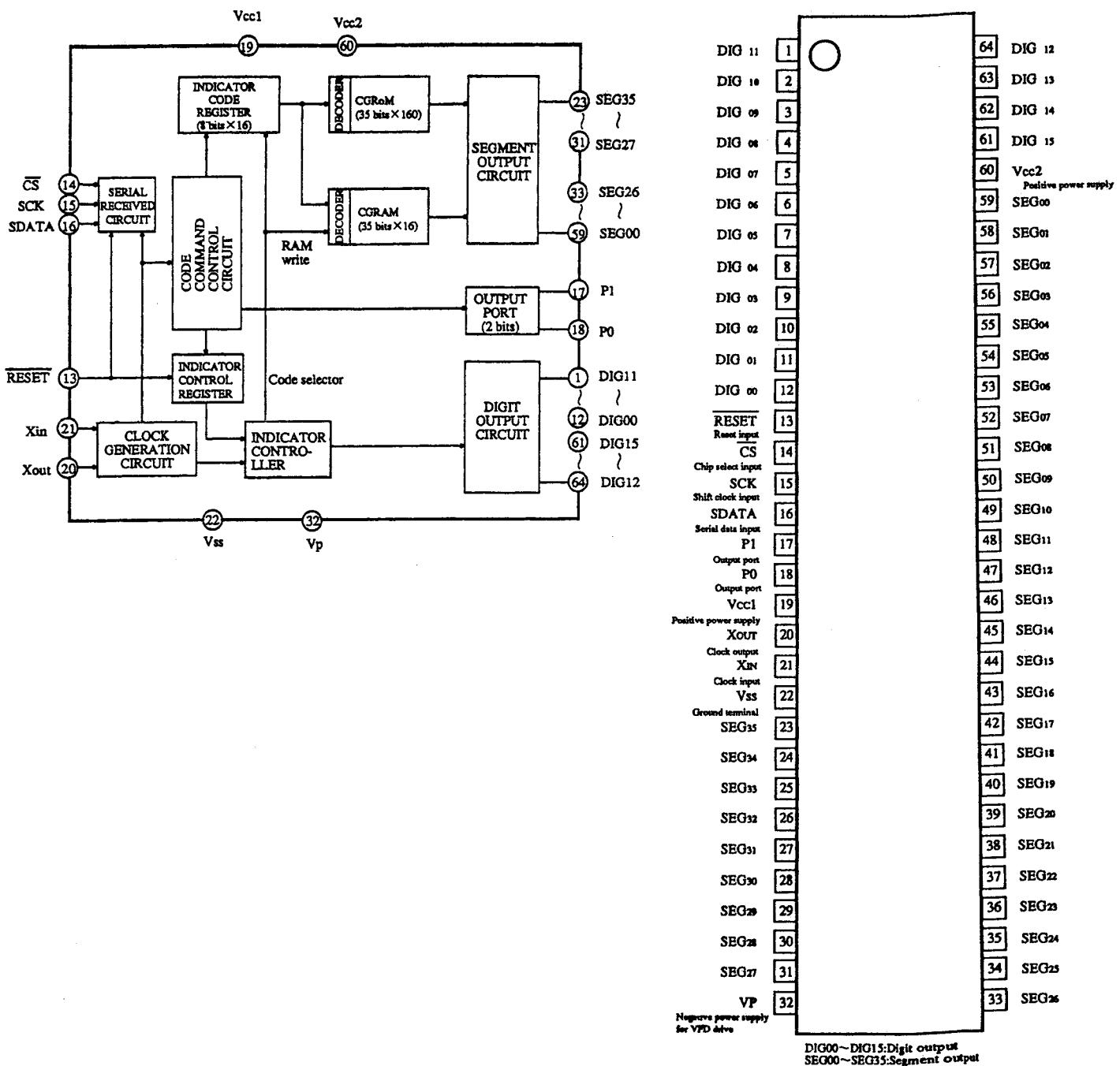
13-BT-131GK (Fluorescent Indicator Tube)



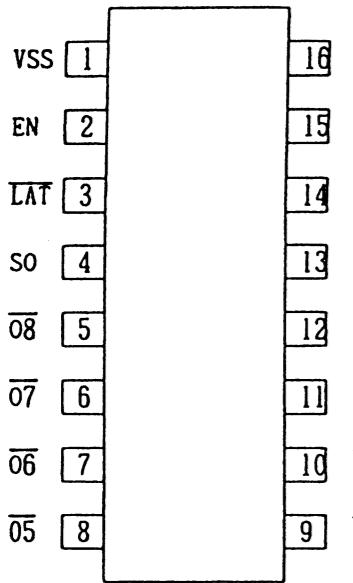
	13G	12G	11G~1G	6G	5G~1G
P1	MIN	SLEEP	1-1	1-1	1-1
P2	mSEC	MEMORY	2-1	2-1	2-1
P3	dB	AUDIO MUTING	3-1	3-1	3-1
P4	CH	SELECTIVE TONE	4-1	4-1	4-1
P5	◀MULTI SOURCE▶	SOURCE DIRECT	5-1	5-1	5-1
P6	RBC OUT	TUNED	1-2	1-2	1-2
P7	SOURCE	□	2-2	2-2	2-2
P8	(SOURCE)	STEREO	3-2	3-2	3-2
P9	VIDEO-1	OFF (Center)	4-2	4-2	4-2
P10	(VIDEO-1)	ON	5-2	5-2	5-2
P11	VIDEO-2	FM MUTE	1-3	1-3	1-3
P12	(VIDEO-2)	AMBISONIC	2-3	2-3	2-3
P13	VIDEO-3	STUDIO	3-3	3-3	3-3
P14	(VIDEO-3)	LIVE	4-3	4-3	4-3
P15	VIDEO-4	THEATER	5-3	5-3	5-3
P16	(VIDEO-4)	HALL	1-4	1-4	1-4
P17	TAPE-1	DOLBY PRO LOGIC	2-4	2-4	2-4
P18	(TAPE-1)	OFF (LEFT)	3-4	3-4	3-4
P19	TAPE-2	SURROUND MODE	4-4	4-4	4-4
P20	(TAPE-2)	1 2 3 4 5	5-4	5-4	5-4
P21	TUNER	B5	1-5	1-5	1-5
P22	(TUNER)	B4	2-5	2-5	2-5
P23	PHONO	B3	3-5	3-5	3-5
P24	(PHONO)	B2	4-5	4-5	4-5
P25	CD	B1	5-5	5-5	5-5
P26	(CD)	SIGNAL	1-6	1-6	1-6
P27	MHz	REMOTE	2-6	2-6	2-6
P28	MHz	MAIN	3-6	3-6	3-6
P29	S1	SPEAKERS	4-6	4-6	4-6
P30	RDS	4	5-6	5-6	5-6
P31		3	1-7	1-7	1-7
P32		2	2-7	2-7	2-7
P33		1	3-7	3-7	3-7
P34		VIDEO	4-7	4-7	4-7
P35			5-7	5-7	5-7
P36			O		

PIN NO.	64	63	62	61	60	59	58	57
CONNECTION	F2	F2	NP	NP	P36	P35	P34	P33
PIN NO.	56	55	54	53	52	51	50	49
CONNECTION	P32	P31	P30	P29	P28	P27	P26	P25
PIN NO.	48	47	46	45	44	43	42	41
CONNECTION	P24	P23	P22	P21	P20	P19	P18	P17
PIN NO.	40	39	38	37	36	35	34	33
CONNECTION	P16	P15	P14	P13	P12	P11	P10	P9
PIN NO.	32	31	30	29	28	27	26	25
CONNECTION	P8	P7	P6	P5	P4	P3	P2	P1
PIN NO.	24	23	22	21	20	19	18	17
CONNECTION	NC	13G						
PIN NO.	16	15	14	13	12	11	10	9
CONNECTION	12G	11G	10G	9G	8G	7G	6G	5G
PIN NO.	8	7	6	5	4	3	2	1
CONNECTION	4G	3G	2G	1G	NP	NP	F1	F1

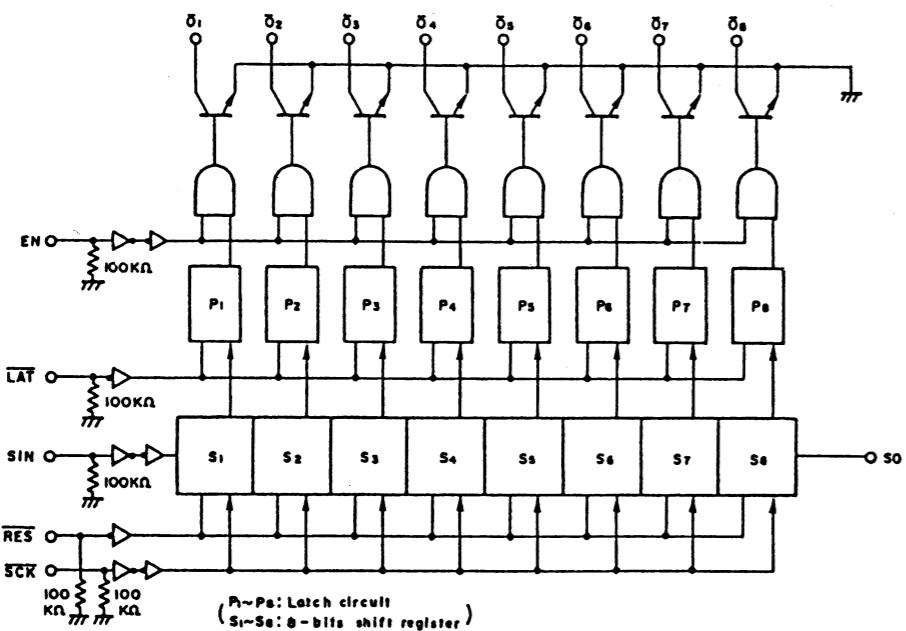
Q702
M66004FP (FL Tube Driver)



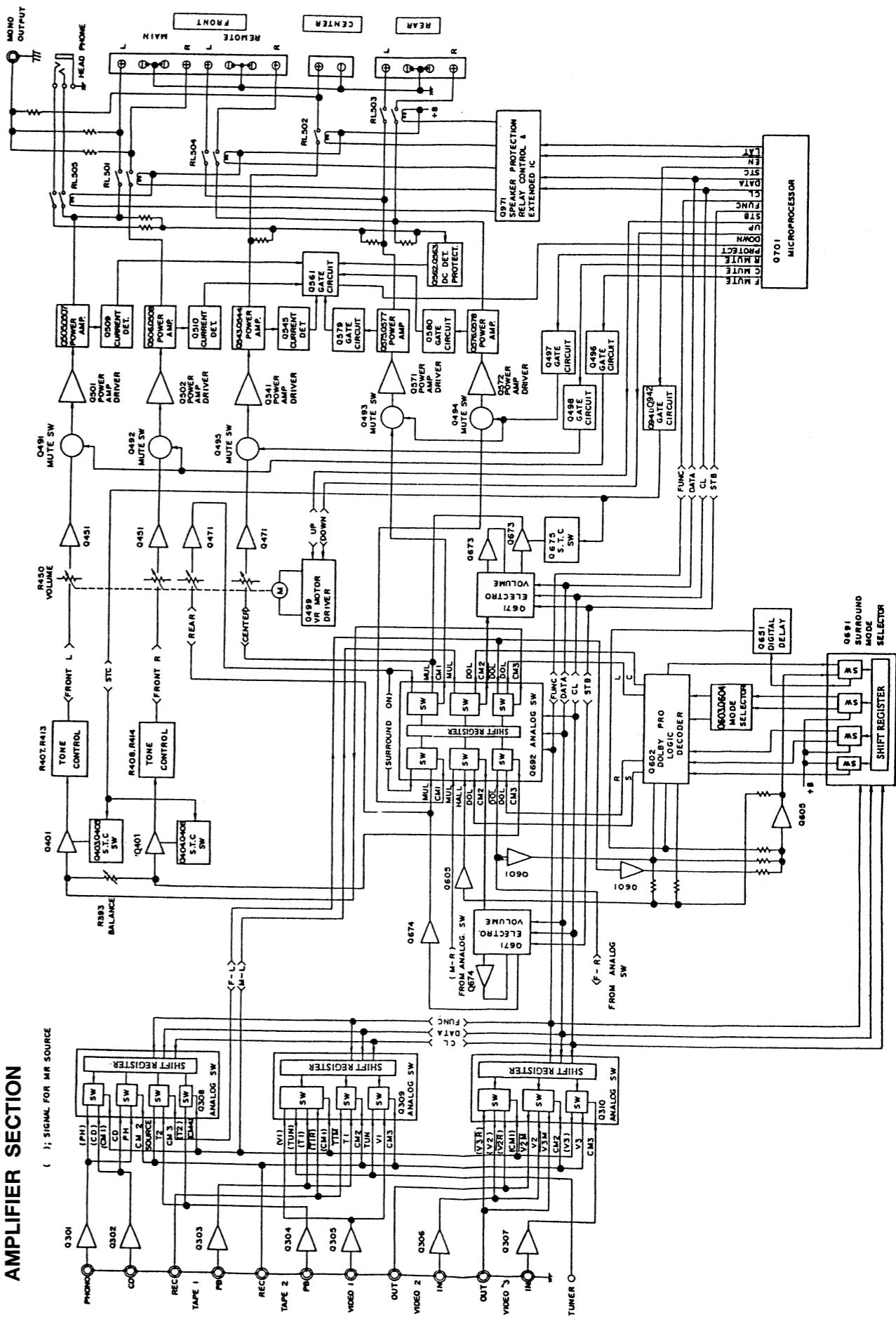
Q971
μPD6345C (Extended IC)



Pin No.	Symbol	Description
1	VSS	Ground terminal
2	EN	Chip enable input terminal. Connect to the terminal EN of the microprocessor.
3	LAT	Latch input terminal. Connect to the terminal LAT of the microprocessor.
4	SO	Serial data output terminal. Not used.
5	O8	Not used.
6	O7	Not used.
7	O6	Front speaker relay control output terminal
8	O5	Center speaker relay control output terminal
9	O4	Rear speaker relay control terminal
10	O3	Remote speaker relay control terminal
11	O2	Headphone relay control output terminal
12	O1	Power supply voltage switch relay control output terminal
13	SIN	Serial data input terminal. Connect to the terminal DATA of the microprocessor.
14	SCK	Serial clock input terminal. Connect to the terminal CLOCK of the microprocessor.
15	RESET	Reset input terminal
16	VDD	Power supply terminal



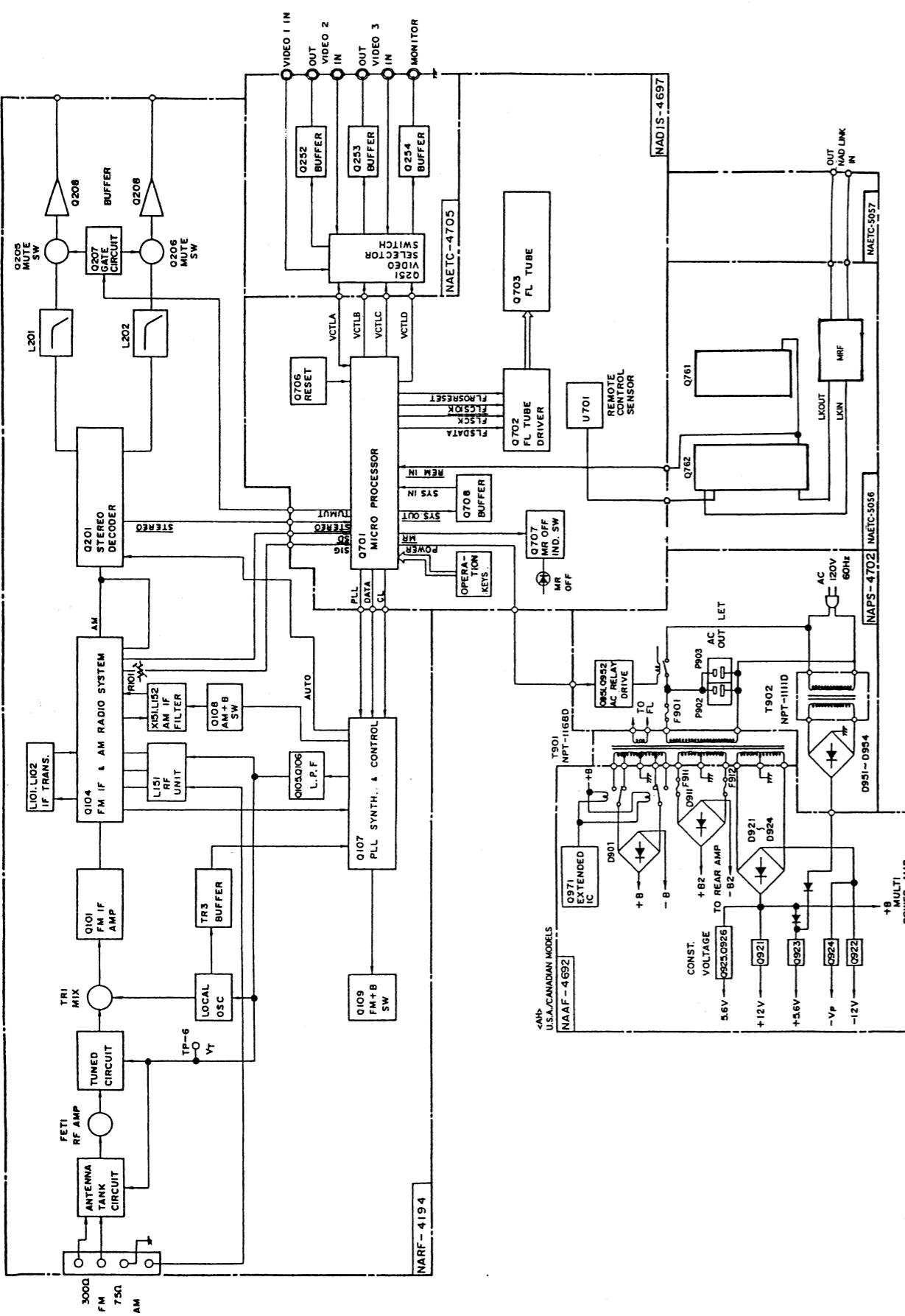
BLOCK DIAGRAMS
AMPLIFIER SECTION



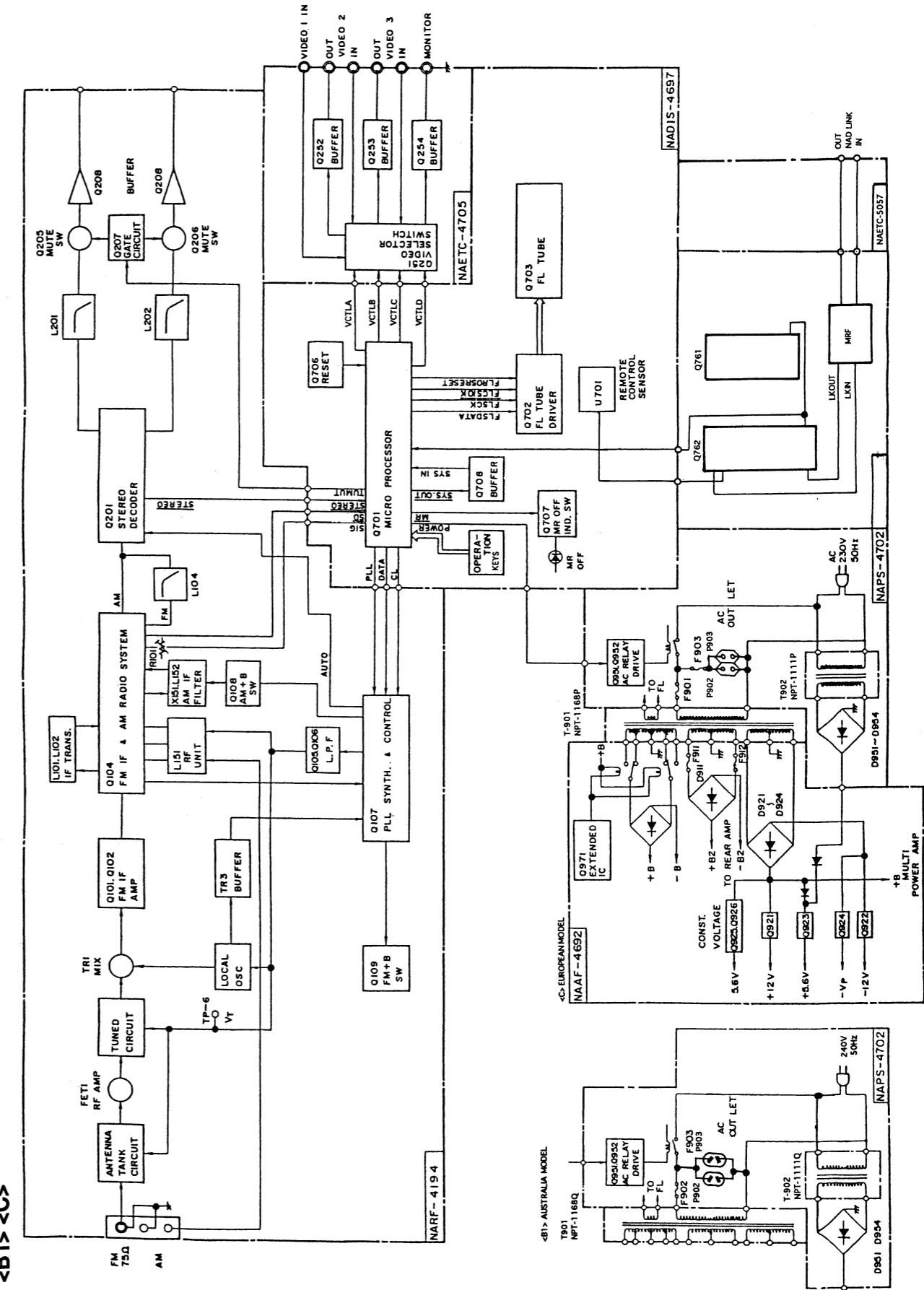
BLOCK DIAGRAMS

TUNER SECTION (120V model)

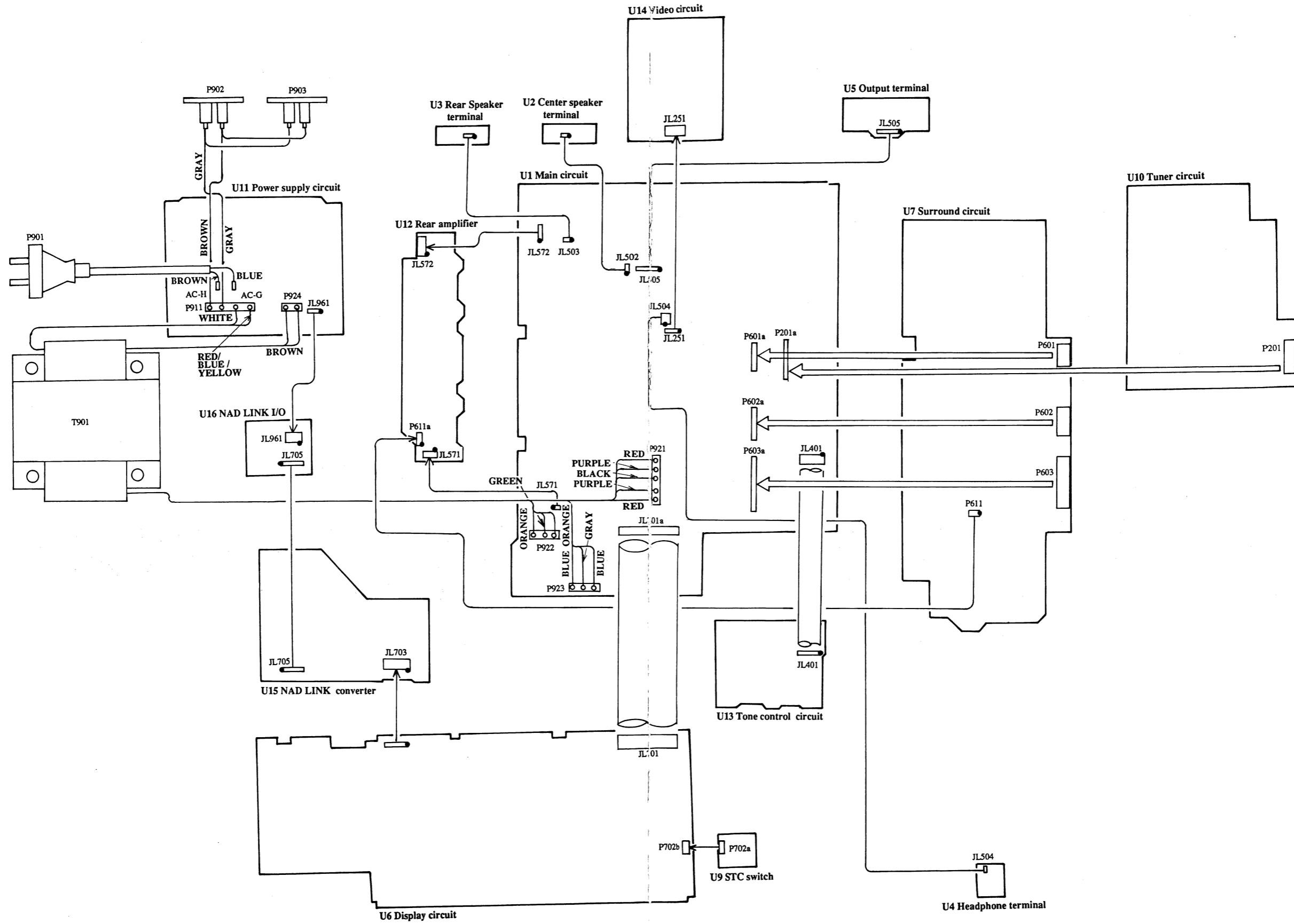
TUNER SECTION (120V model)



✓B1



WIRING DIAGRAM



A

B

C

D

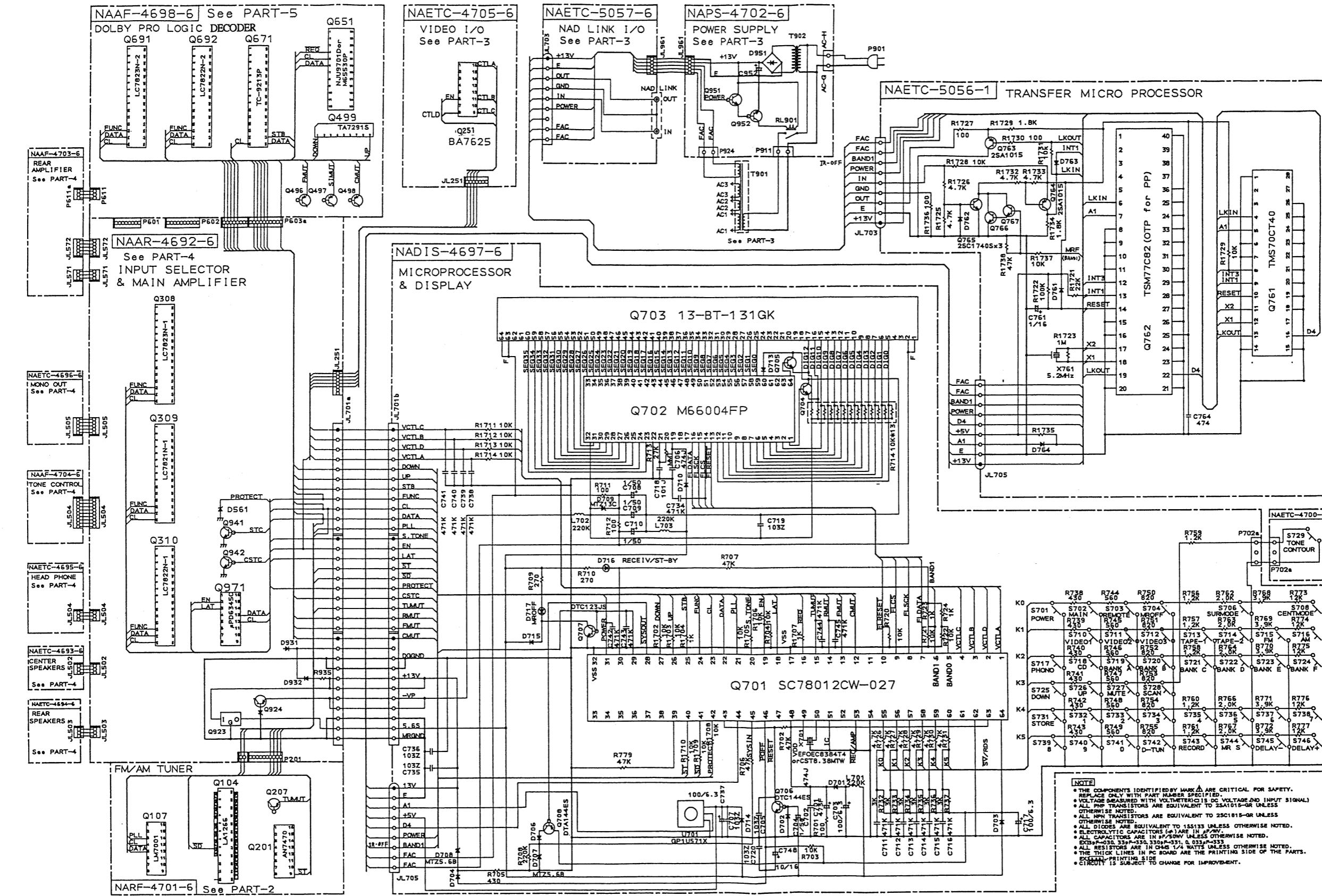
E

F

G

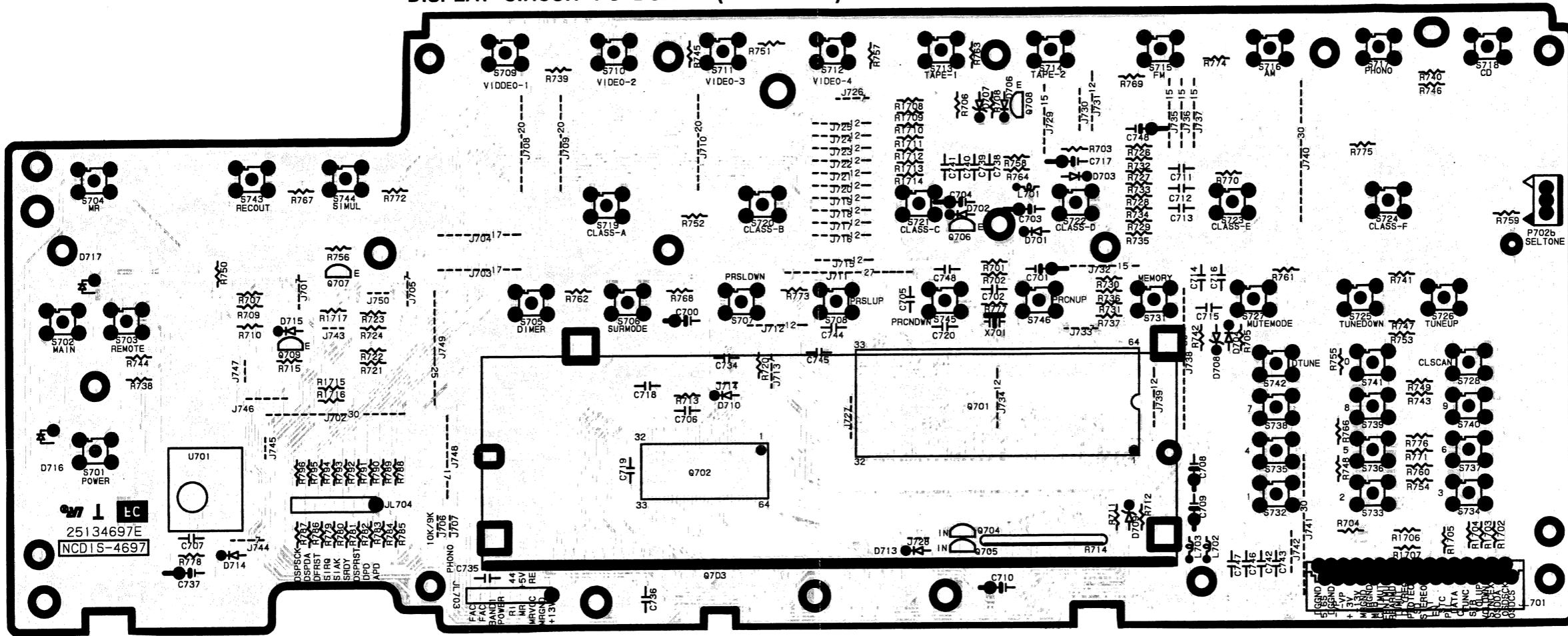
SCHEMATIC DIAGRAM (PART-1)

CONNECTION DIAGRAM OF MICROPROCESSOR

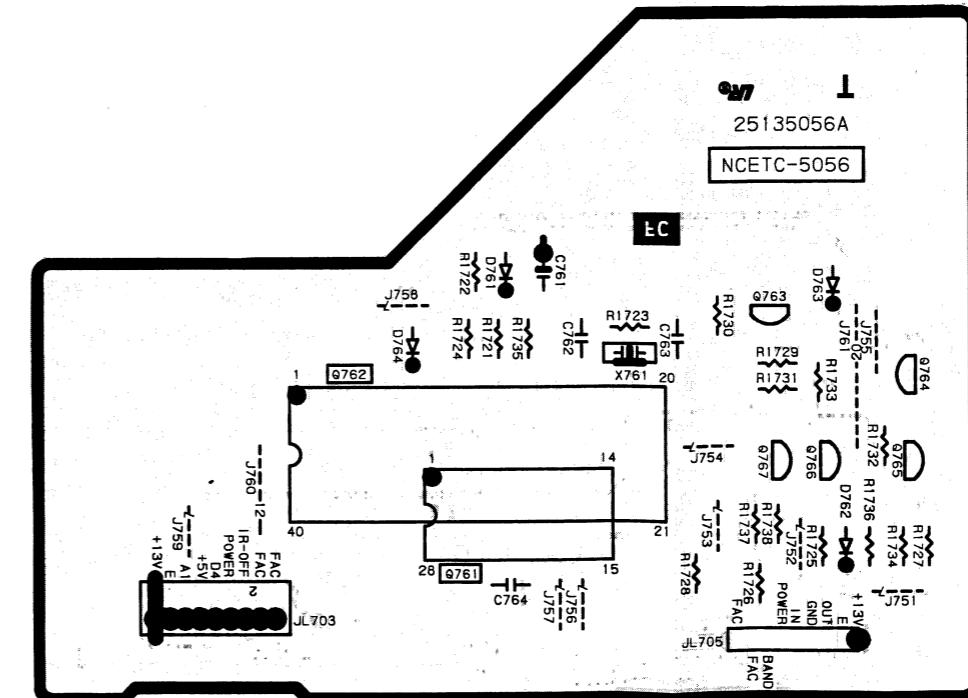


PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

DISPLAY CIRCUIT PC BOARD (NADIS-4697)



**STC SWITCH PC BOARD
(NASW-4700)**



NAD LINK CONVERTER PC BOARD (NAETC-5056)

A

8

1

8

F

G

SCHEMATIC DIAGRAM (PART-2)

TUNER SECTION

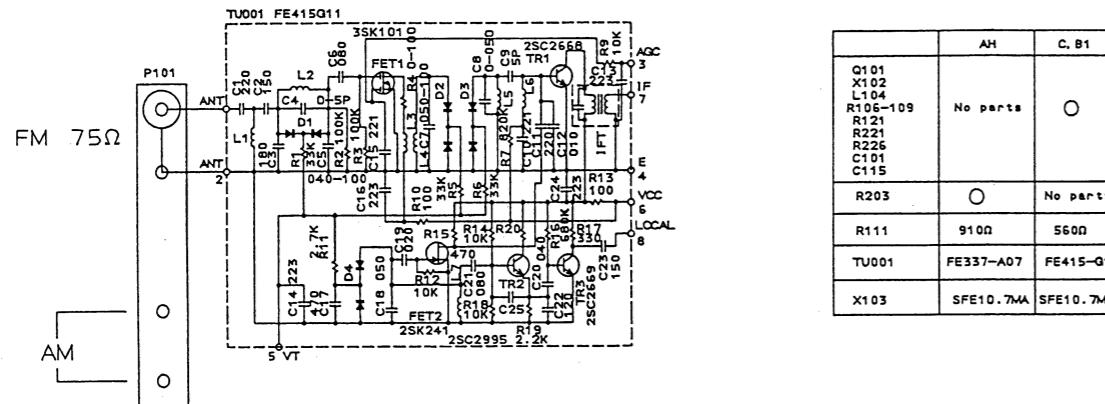
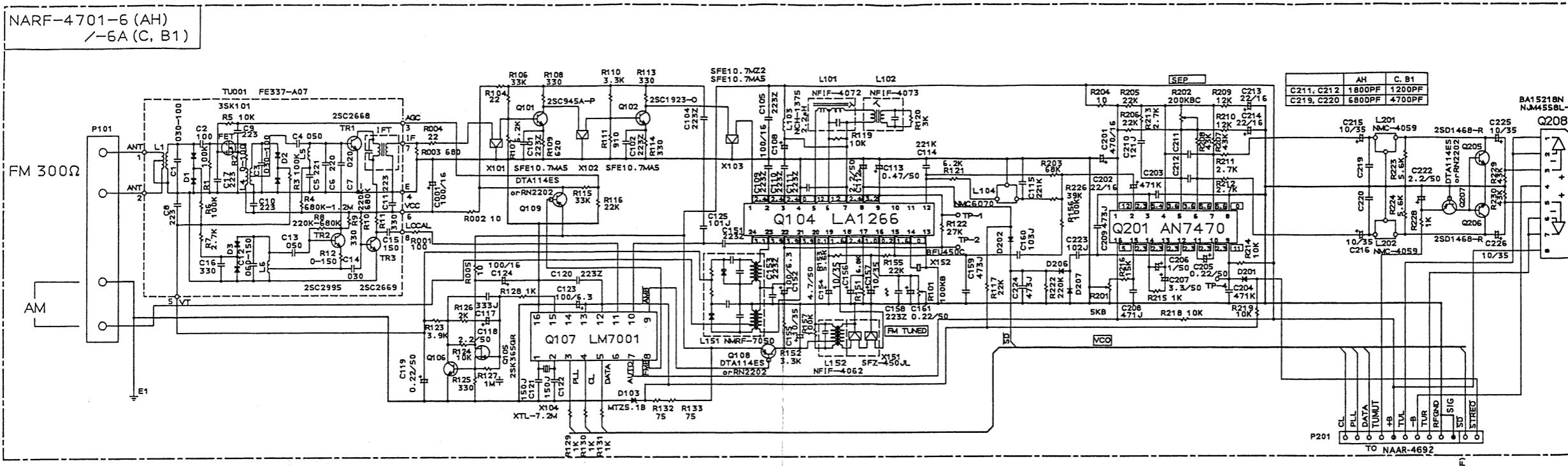
1

2

3

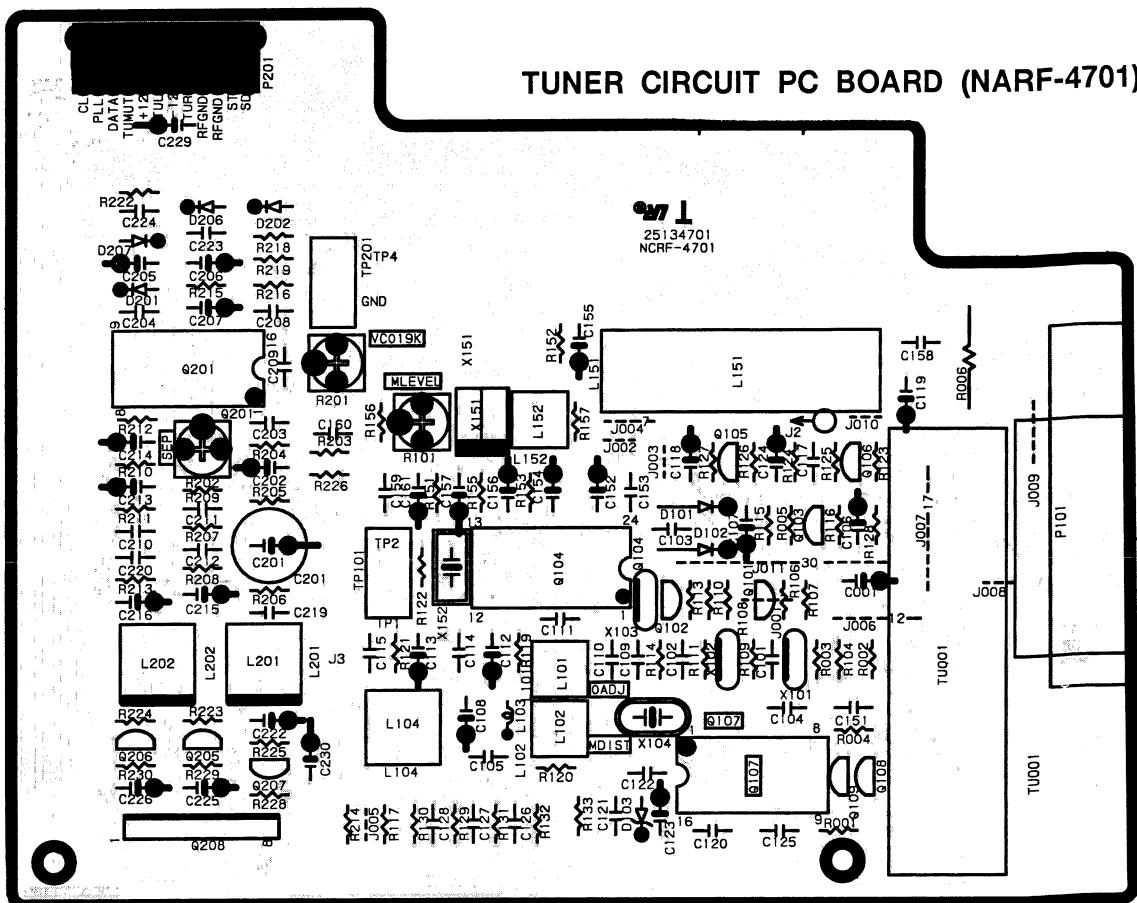
4

5

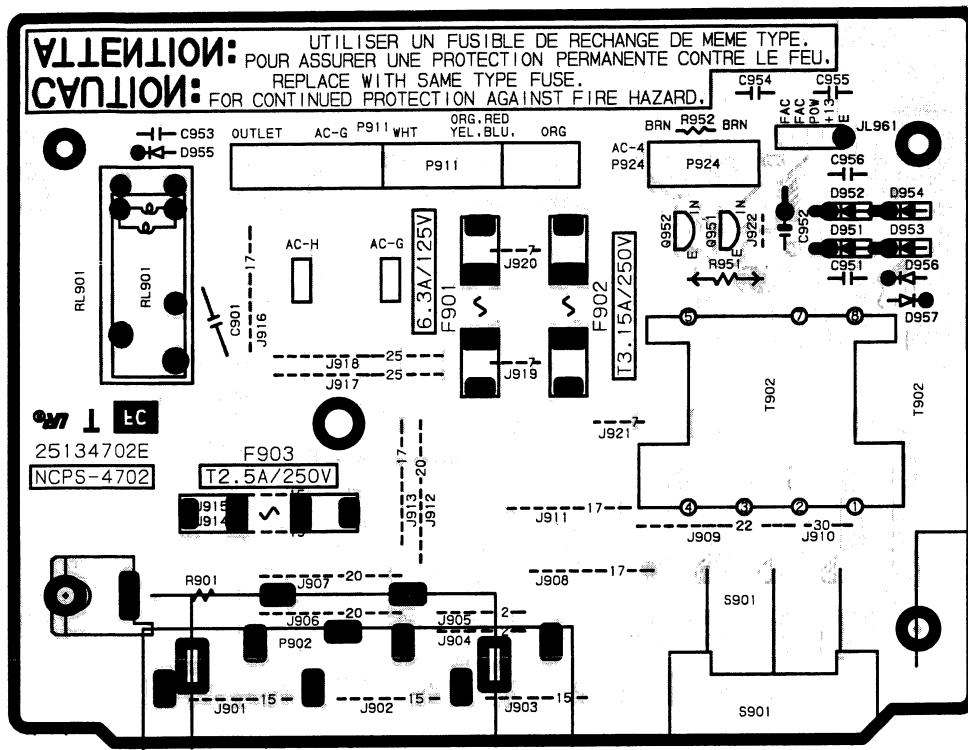


PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE

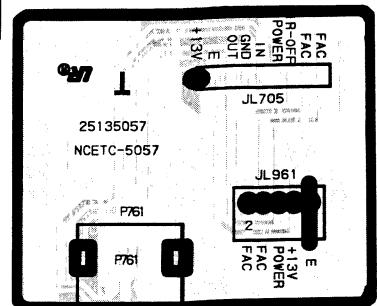
TUNER CIRCUIT PC BOARD (NARF-4701)



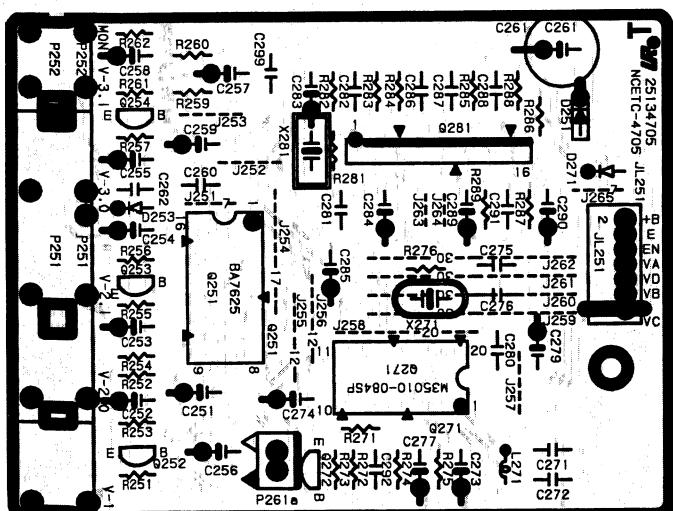
PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



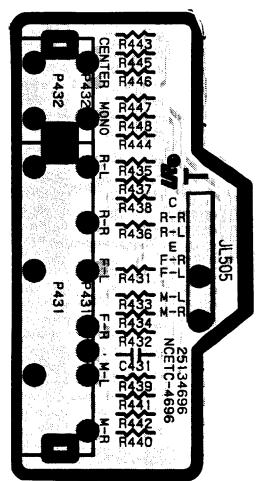
POWER SUPPLY CIRCUIT PC BOARD (NAPS-4702)



**NAD LINK I/O PC BOARD
(NAETC-5057)**



VIDEO CIRCUIT PC BOARD (NAETC-4705)



**OUTPUT TERMINAL PC BOARD
(NAETC-4696)**

A

B

C

D

E

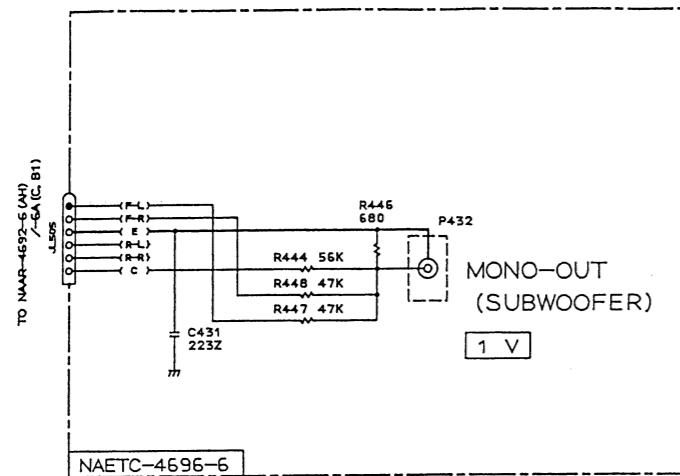
F

G

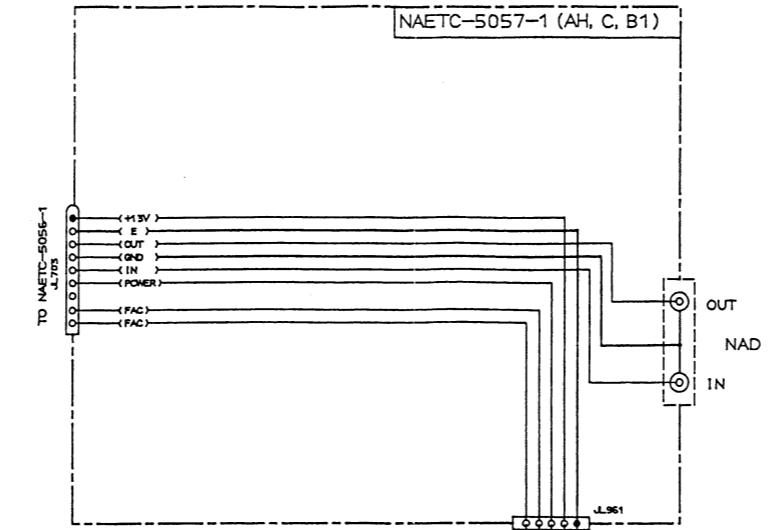
SCHEMATIC DIAGRAM (PART-3)

POWER SUPPLY AND VIDEO SECTION

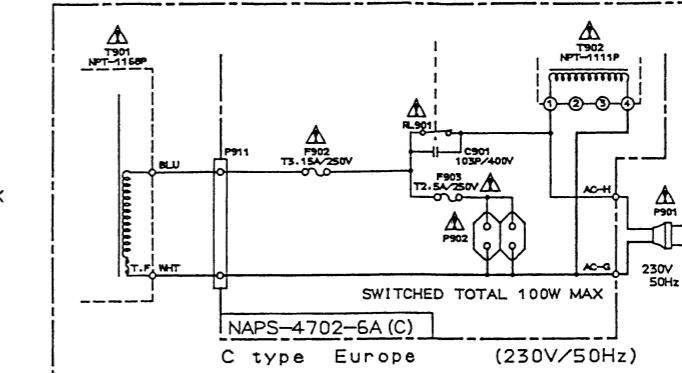
1



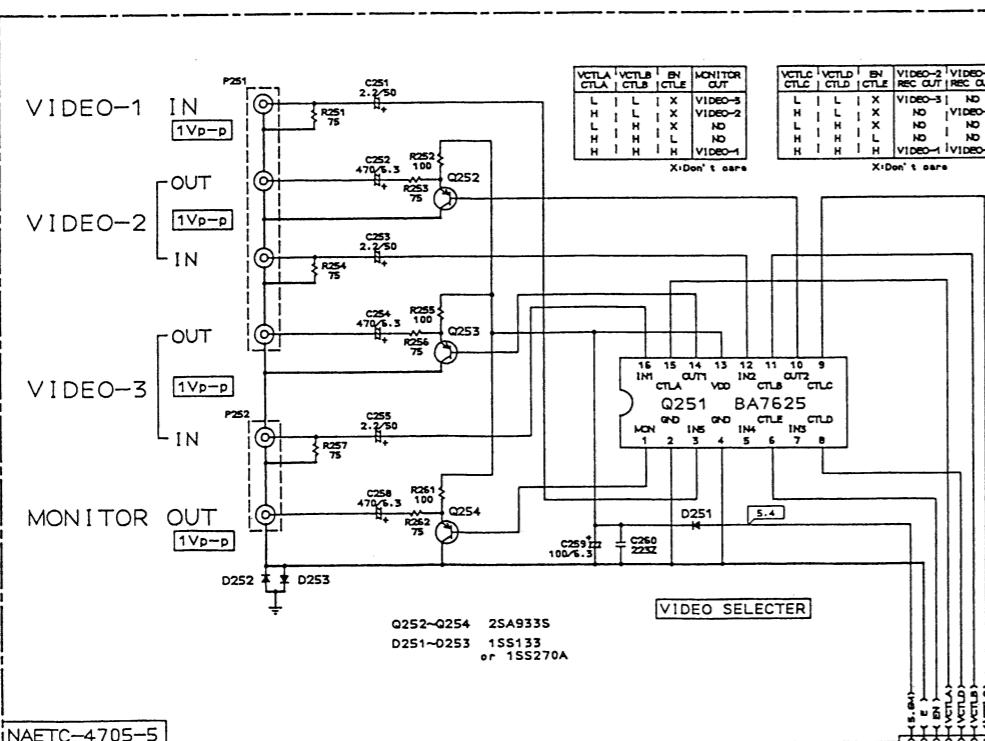
2



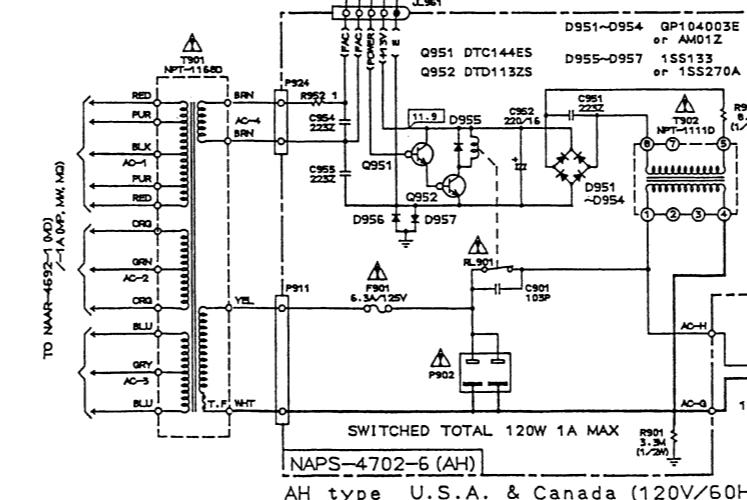
3



4



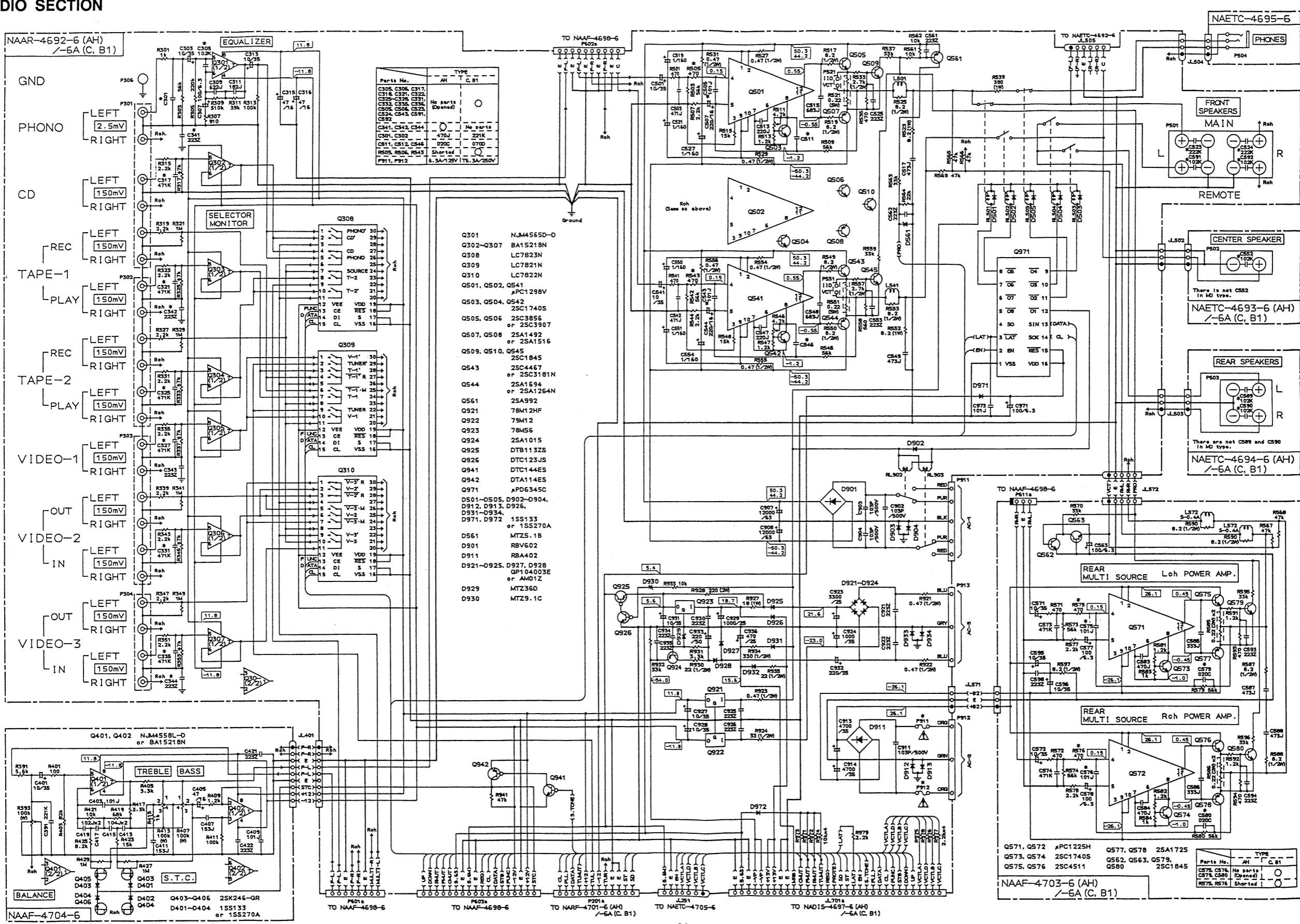
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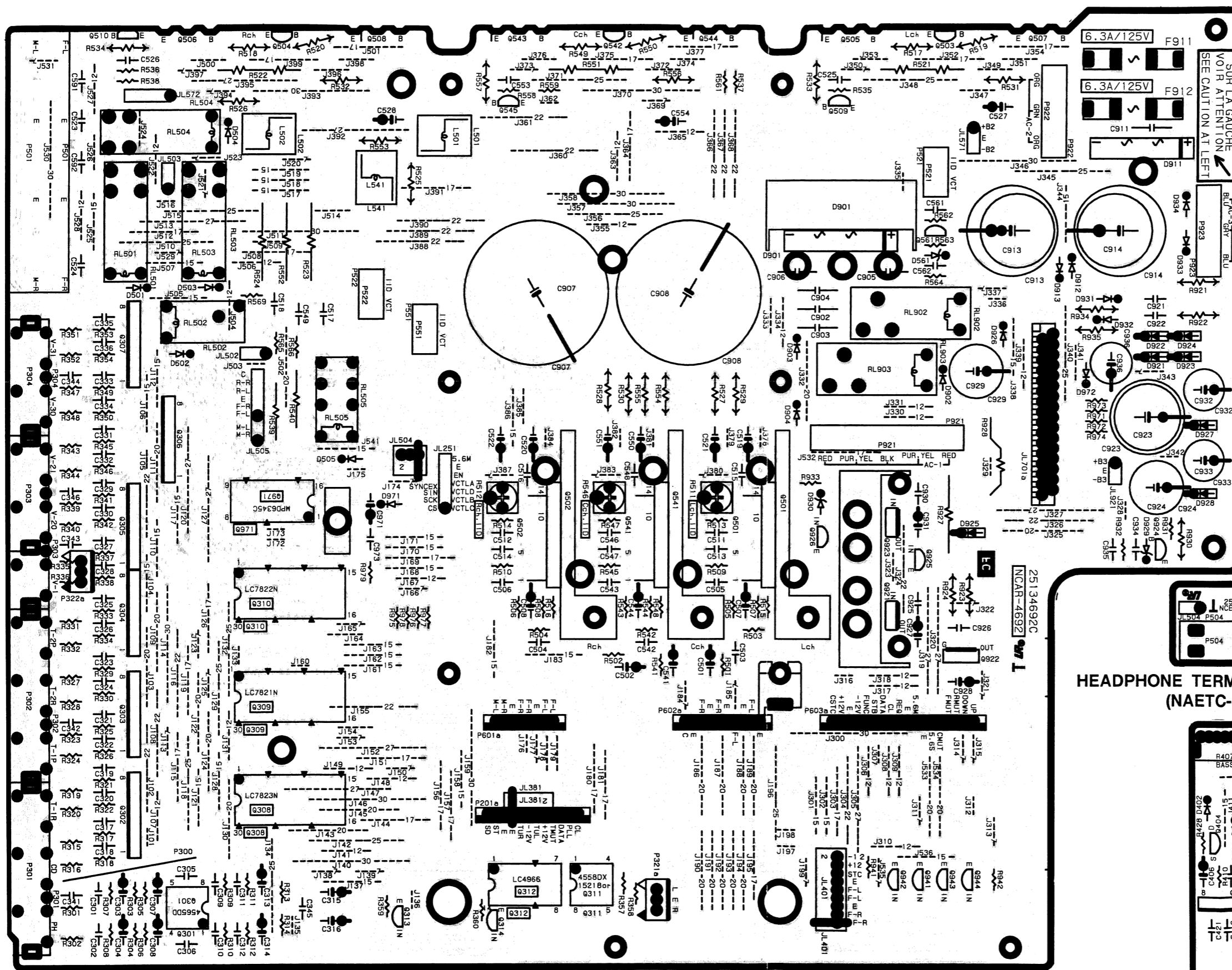
A B C D E F G

SCHEMATIC DIAGRAM (PART-4)

AUDIO SECTION

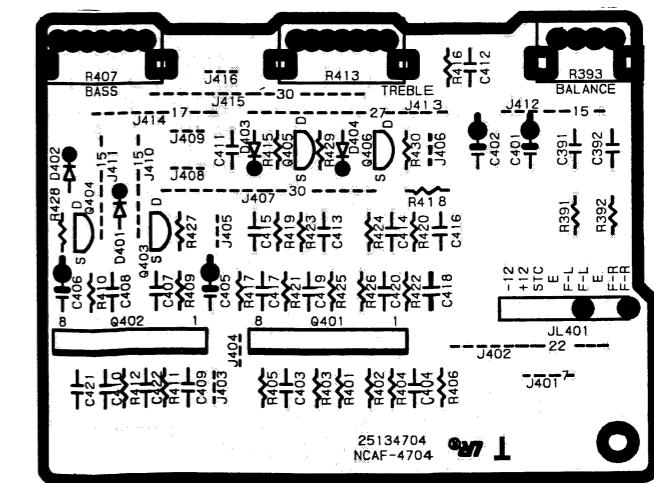


PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



MAIN CIRCUIT PC BOARD (NAAR-4692)

**HEADPHONE TERMINAL PC BOARD
(NAETC-4695)**



TONE CONTROL CIRCUIT PC BOARD (NAAF-4704)

REAR AMPLIFIER PC BOARD (NAAF-4703)

A

0

4

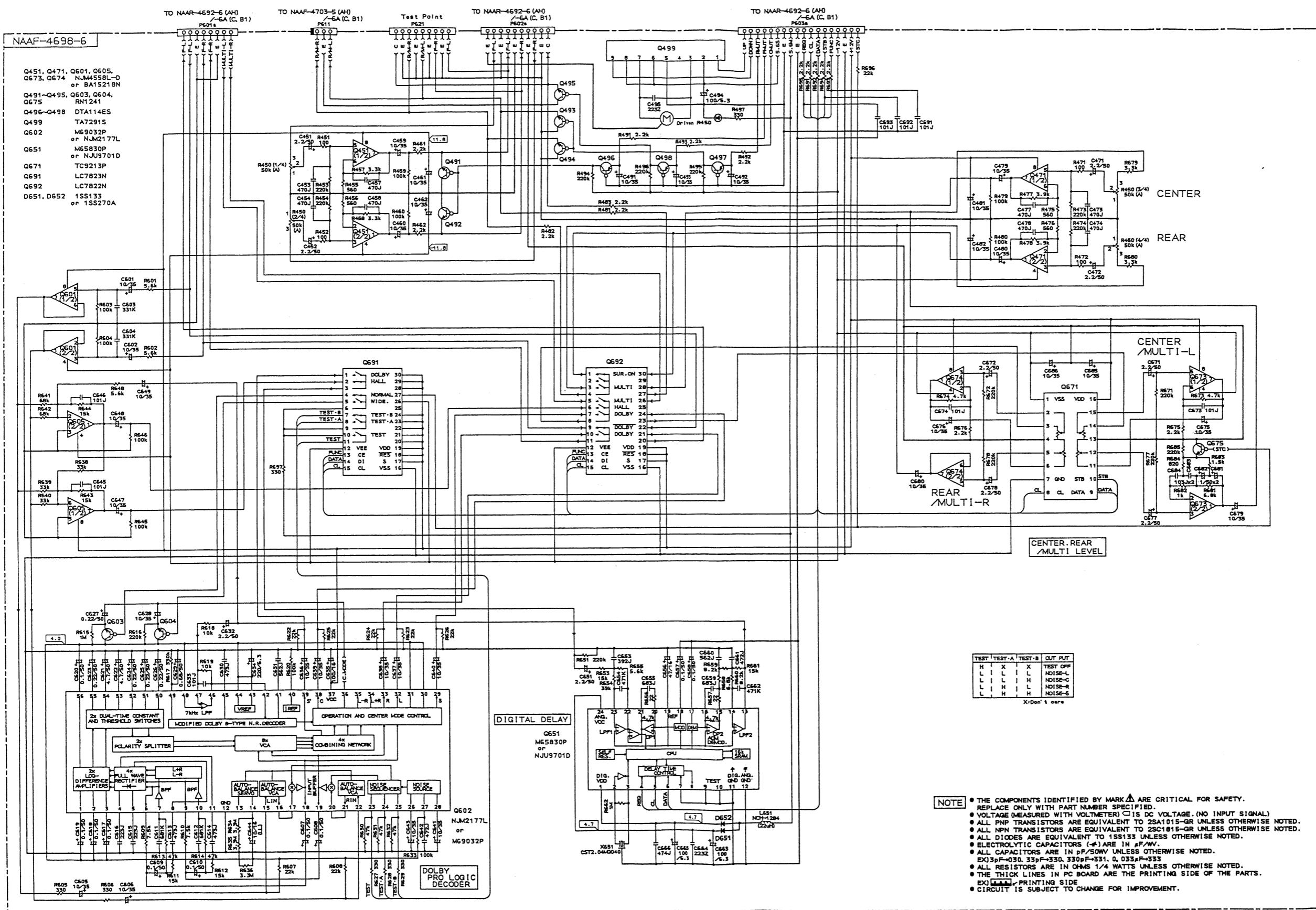
8

F

G

SCHEMATIC DIAGRAM (PART-5)

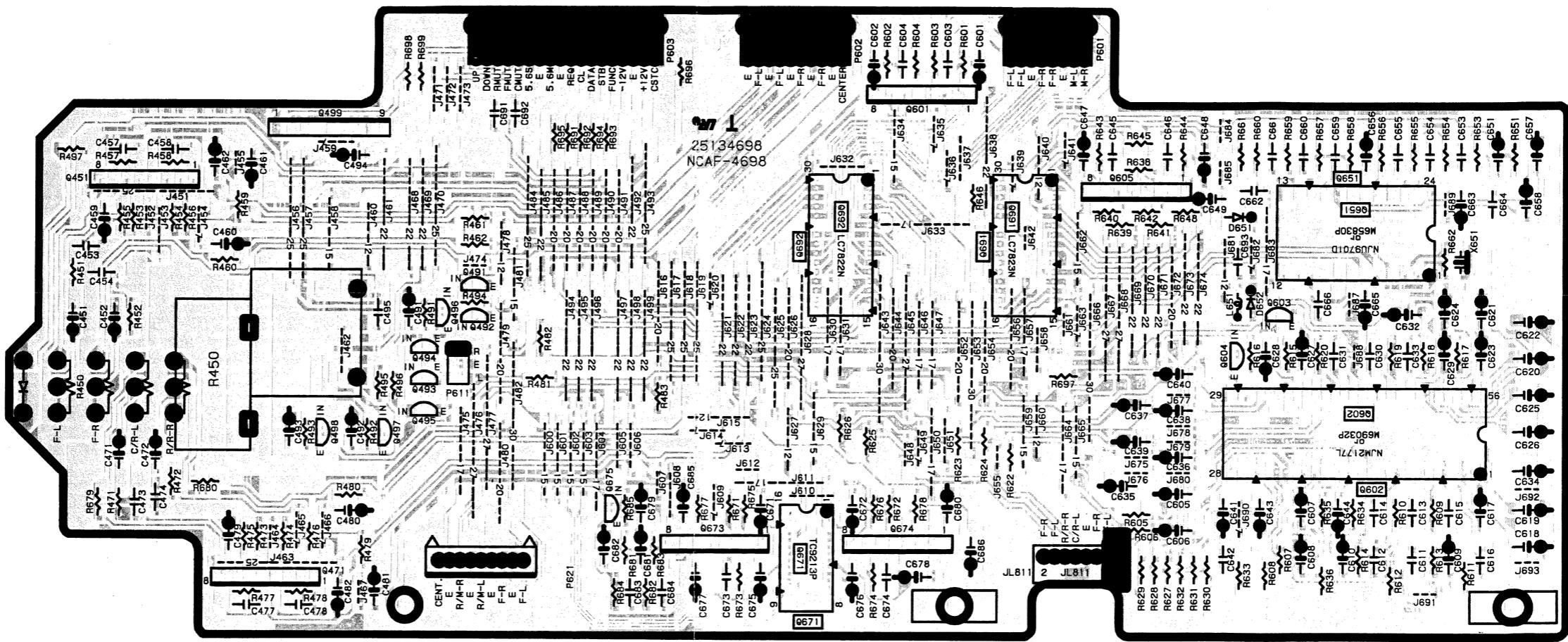
SURROUND SECTION



NOTE

- THE COMPONENTS IDENTIFIED BY MARK **A** ARE CRITICAL FOR SAFETY.
REPLACE ONLY WITH PART NUMBER SPECIFIED.
- VOLTAGE (MEASURED WITH VOLTMETER) **C** IS DC VOLTAGE. (NO INPUT SIGNAL)
- ALL PNP TRANSISTORS ARE EQUIVALENT TO 2SA1015-GR UNLESS OTHERWISE NOTED.
- ALL NPN TRANSISTORS ARE EQUIVALENT TO 2SC1815-GR UNLESS OTHERWISE NOTED.
- ALL DIODES ARE EQUIVALENT TO 1SS133 UNLESS OTHERWISE NOTED.
- ELECTROLYTIC CAPACITORS (-4) ARE IN μ F/W.
- ALL CAPACITORS ARE IN PF/50V UNLESS OTHERWISE NOTED.
- EX) 3pF-030, 33pF-330, 330pF-331, 0.033 μ F-333
- ALL RESISTORS ARE IN OHMS 1/4 WATTS UNLESS OTHERWISE NOTED.
- THE THICK LINES IN PC BOARD ARE THE PRINTING SIDE OF THE PARTS.
- EX) **_____** PRINTING SIDE
- CIRCUIT IS SUBJECT TO CHANGE FOR IMPROVEMENT.

PRINTED CIRCUIT BOARD VIEW FROM BOTTOM SIDE



SURROUND CIRCUIT PC BOARD (NAAF-4698)

ADJUSTMENT PROCEDURES

● Preparation

1. Input

FM mono : 1 kHz, 75kHz devi., 60dB/μV

FM stereo : 1 kHz, 67.5kHz devi., 60dB/μV

Pilot signal 19kHz 7.5kHz devi.

AM : 400Hz 30% mod.

2. Outputs

Connect the non-inductive type resistors of 8 ohms to the main speaker, remote speaker, and rear speaker terminals unless otherwise noted.

4. Standard Knob Positions

Tape-2 Monitor	Off
Master Volume.....	Maximum
Rear Volume	Center
Center Volume	Center
Multi Source Volume	Center
Bass Control	Center
Treble Control	Center
Balance Control	Center

3. Initializing of unit

1. Set POWER switch to ON.

2. Press and hold down the CD button, then press the POWER button.

3. "Test-" is displayed on the display for approximately 5 seconds.

4. While "Test-" is displayed, unplug the power cord from its AC outlet, then "Test-" will disappear.

5. Preset memory and parameters stored in memory, such as surround are initialized and will return to the factory settings.

Muting	Off
Rec Out	Source
Input Selector	CD
Speakers Main, Remote	On
Selective Tone	Off
Surround Mode	Off
Center Mode	Wide Band
Delay Time	20 ms
MR Off	On
FM Mute	On

FM ADJUSTMENT

Item	Step	Connection of instrument	FM SG output	Stereo modulator output	Tuning frequency	Output indicator	Adjustment point	Adjust for	Remarks
FM IF/RF	1	Fig.1	99.1MHz, (99.0MHz) 1kHz 75kHz devi. 65dBf(60dB μ)	—	99.1MHz	DC voltmeter	L101	0±20mV	IF BAND switch: WIDE. FM MUTE/MODE switch:ON/STEREO Repeat the steps 1 and 3 until no further adjustment is necessary.
	2					AC voltmeter	IIFT on the front end	Maximum	
	3					Distortion analyzer	L102	Minimum	
VCO		Fig.2	99.1MHz (99.0MHz),1kHz 75kHz,devi. 65dBf(60dB μ)	—	99.1MHz	Frequency counter	R201	19,000±10Hz	
Stereo Distortion		Fig.3	99.1MHz (99.0MHz) Ext. mod. 65dBf(60dB μ)	Channel L or R 1kHz	99.1MHz	Distortion analyzer	IIFT on the front end	Minimum	Don't turn more than ±180°
Stereo Separation	1	Fig. 3	99.1MHz (99.0MHz) Ext. mod. 65dBf(60dB μ)	Channel L 1kHz	99.1MHz	Channel R AC voltmeter	R202	Minimum	Maximum and same separation
	2			Channel R 1kHz		Channel L AC voltmeter		Minimum	
Muting Level		Fig.3	99.1MHz (99.0MHz), 17.2dBf(12dB) <19.2dBf(14dB)>	—	99.1MHz	Oscilloscope	R101	Signal output	

AM ADJUSTMENT

<A>

Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment Point	Adjust for
1		530kHz	Digital DC voltmeter	OSC coil on RF block L151	1.4±0.2V
2	600kHz 400Hz 30% mod. -60dB/m	600kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	990kHz 400Hz 30% mod. -60dB/m	990kHz	AC voltmeter	L152	Maximum

Reference Specification

FM tuned voltage : 87.9MHz ~ 107.9MHz

More than 1.3V ~ Less than 10V

AM tuned voltage : 530kHz ~ 1710kHz

1.4±0.2V ~ Less than 9.0V

<B1><C>

Step	AM SG output	Tuning Frequency	Output Indicator	Adjustment Point	Adjust for
1		522kHz or 531kHz	Digital DC voltmeter	OSC coil on RF block L151	1.3±0.2V
2	603kHz 400Hz 30% mod. -60dB/m	603kHz	AC voltmeter	RF coil on RF block L151	Maximum
3	999kHz 400Hz 30% mod. -60dB/m	999kHz	AC voltmeter	L152	Maximum

Reference Specification

FM tuned voltage : 87.5MHz ~ 108.0MHz

More than 1.3V ~ Less than 10V

AM tuned voltage : 522kHz ~ 1611kHz

1.3±0.2V ~ Less than 9.0V

MAIN CIRCUIT PC BOARD

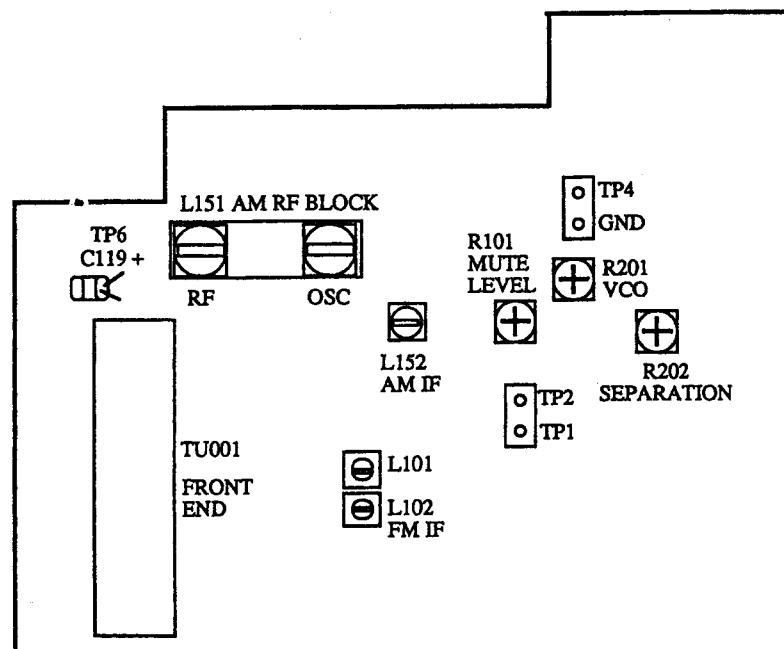
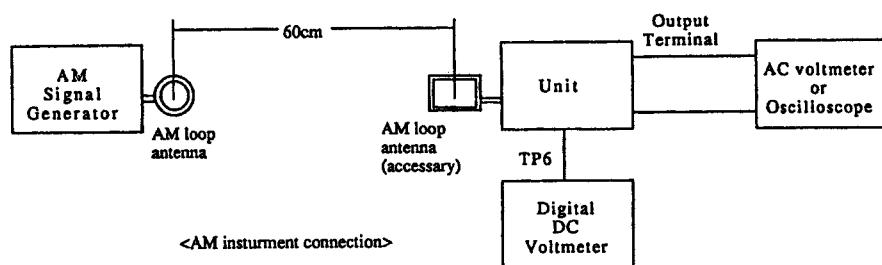
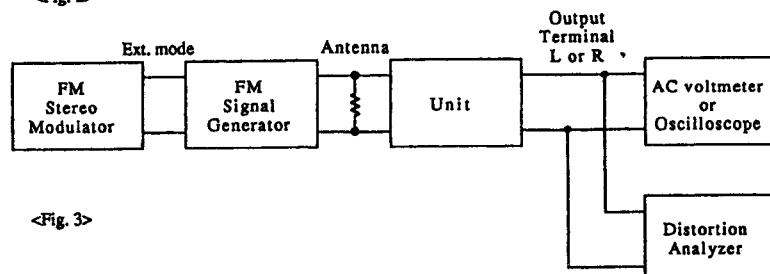
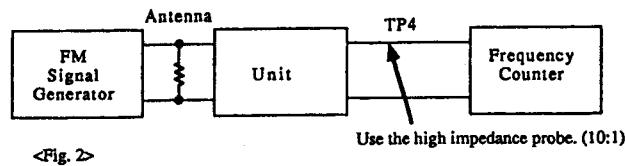
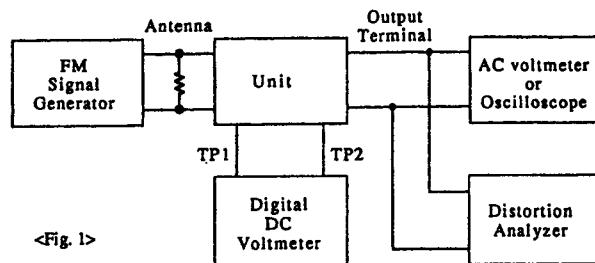
Amplifier section

Idling Current Adjustment

Connect the DC voltmeter to the terminals P521,P522, and P551(VCT and IID) on the main circuit pc board.

Adjust the trim resistors R511,R512 and R546 so that the indicator of voltmeter becomes $5\pm 0.5\text{mV}$.

NOTE: Adjust after switching on for 5 minutes.



NOTE: THE COMPONENTS IDENTIFIED BY MARK **A**
ARE CRITICAL FOR RISK OF FIRE AND
ELECTRIC SHOCK. REPLACE ONLY WITH
PART NUMBER SPECIFIED.

PRINTED CIRCUIT BOARD PARTS LIST

MAIN CIRCUIT PC BOARD (NAAR-4692)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION	
	ICs			D929	224453604	MTZ36D
Q301	22240191	NJM4565D-D	D930	224450913	MTZ9.1C	
Q302-Q307	22240247	BA15218N	D931-D934	223205 or 223163	1SS270A or 1SS133	
Q308	22240339	LC7823N	D971,D972	223205 or 223163	1SS270A or 1SS133	
Q309	22240280	LC7821N				
Q310	22240270	LC7822N				
Q501,Q502	22240311	MPC1298V	L501,L502	231209s	S-0.4A	
Q541	22240311	MPC1298V	L541	231209s	S-0.4A	
Q921	222780125NEC	78M12HF				
Q922	222790125	79M12				
Q923	222780565JRC	78M56				
Q971	22240211	MPD6345C				
	Transistors					
Q503	2213284	2SC1740S-R	C303,C304	354761009	10 μ F, 35V, Elect.	
Q504	2213284	2SC1740S-R	C307,C308	354721019	100 μ F, 6.3V, Elect.	
Q505,Q506	2201653 or 2201654 or 2201655 or 2202272 or 2202273	* 2SC3856-O or * 2SC3856-Y or * 2SC3856-P or * 2SC3907-R or * 2SC3907-O	C309,C310	374726224	6200pF \pm 5%, 50V, Plastic	
			C311,C312	374721824	1800pF \pm 5%, 50V, Plastic	
			C313,C314	354761009	10 μ F, 35V, Elect.	
			C315,C316	354744709	47 μ F, 16V, Elect.	
			C501,C502	354761009	10 μ F, 35V, Eleclt.	
			C503,C504	374724714	470pF \pm 5%, 50V, Plastic	
			C507,C508	354742219	220 μ F, 16V, Elect.	
			C515,C516	374726834	0.068 μ F \pm 5%, 50V, Plastic	
			C517,C518	374724734	0.047 μ F \pm 5%, 50V, Plastic	
Q507,Q508	2201663 or 2201664 or 2201665 or 2202262 or 2202263	* 2SA1492-O or * 2SA1492-Y or * 2SA1492-P or * 2SA1516-R or * 2SA1516-O	C519-C522	354700109	1 μ F, 160V, Elect.	
			C527,C528	354700109	1 μ F, 160V, Elect.	
			C541	354761009	10 μ F, 35V, Elect.	
			C542	374724714	470pF \pm 5%, 50V, Plastic	
			C544	354742219	220 μ F, 16V, Elect.	
Q509,Q510	2211732 or 2211733	2SC1845-F or 2SC1845-E	C548	374726834	0.068 μ F \pm 5%, 50V, Plastic	
			C549	374724734	0.047 μ F \pm 5%, 50V, Plastic	
Q542	2213284	2SC1740S-R	C550,C551	354700109	1 μ F, 160V, Elect.	
Q543	2202253 or 2202254 or 2202256 or 2202502 or 2202503	* 2SC4467-O or * 2SC4467-Y or * 2SC4467-P or * 2SC3181N-R or * 2SC3181N-O	C554	354700109	1 μ F, 160V, Elect.	
			C907,C908	3504258	12000 μ F, 63V, Elect.	
			C913,C914	3504213	4700 μ F, 35V, Elect.	
			C923	354753329	3300 μ F, 25V, Elect.	
			C924	354761029	1000 μ F, 35V, Elect.	
Q544	2202243 or 2202244 or 2202246 or 2202492 or 2202493	* 2SA1694-O or * 2SA1694-Y or * 2SA1694-P or * 2SA1264N-R or * 2SA1264N-O	C927,C928	354761009	10 μ F, 35V, Elect.	
			C929	354751029	1000 μ F, 25V, Elect.	
			C931	354761009	10 μ F, 35V, Elect.	
			C932,C933	354762219	220 μ F, 35V, Elelct.	
			C936	354754719	470 μ F, 25V, Elelct.	
Q545	2211732 or 2211733	2SC1845-F or 2SC1845-E	C971	354721019	100 μ F, 6.3V, Elelct.	
Q561	2211792 or 2211793	2SA992-F or 2SA992-E				
Q924	2211455	2SA1015-GR	R511,R512	5210261	Resistors	
Q925	2213830	DTB113ZS	R517-R520	452530824	N06HR 5KBC, Trim	
Q926	2213640	DTC123JS	R521,R522	4000132	8.2 ohm, 1/2W, Metal	
Q941	221282	DTC144ES	R523-R526	451630824	0.22ohm x2,5.5W, Metal Plate	
Q942	2213510	DTA114ES	R527-R532	452534794	8.2 ohm, 1W, Metal	
			R533,R534	442522724	0.47 ohm, 1/2W, Metal	
			R539,R540	441623914	2.7kohm, 1/2W, Metal Oxide	
			R546	5210261	390 ohm, 1W, Metal Oxide	
D501-D505	223205 or 223163	1SS270A or 1SS133	R549,R550	452530824	N06HR 5kBC, trim	
D561	224450512	MTZ5.1B	R551	4000132	8.2 ohm, 1/2W, Metal	
D901	22380038	RBV602	R552	451630824	0.22ohm x2,5.5W, Metal Plate	
D902	223205 or 223163	1SS270A or 1SS133	R553	452530824	8.2 ohm, 1W, Metal	
D903,D904	223205 223163	1SS270A 1SS133	R554-R556	452534794	8.2 ohm, 1/2W, Metal	
			R557	442522724	0.47 ohm, 1/2W, Metal	
			R921-R923	452534794	2.7kohm, 1/2W, Metal Oxide	
			R924	442523304	0.47 ohm, 1/2W, Metal	
D911	22380048	RBA402		452530824	33 ohm, 1/2W, Metal Oxide	
D912,D913	223205 or 223163	1SS270A or 1SS133			8.2 ohm,1/2W,Metal	
					<B1><C>	
D921-D925	22380046 22380035	AM01Z GP104003E	R927	441621804	18 ohm, 1W, Metal Oxide	
D926	223205 or 223163	1SS270A or 1SS133	R928	441722214	220 ohm, 2W, Metal Oxide	
D927,D928	22380046 22380035	AM01Z GP104003E	R930	442522204	22 ohm, 1/2W, Metal Oxide	
			R934	442523314	330 ohm, 1/2W, Metal Oxide	
			R935	442522204	22 ohm, 1/2W, Metal Oxide	

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Relays			ICs	
RL501	25065339	NRL-2P5A-DC24-046	Q701	22240824	MPD78012BCW-139
RL502	25065379	NRL-1P5A-DC24-058	Q702	22240685R9	M66004FP
RL503,RL504	25065339	NRL-2P5A-DC24-046			
RL505	25065470	NRL-2P1.25A-DC24-079		FL tube	
RL902,RL903	25065435	NRL-1P10A-DC24-072	Q703	212120	13-BT-131GK
	Fuses			Transistors	
F911	252166Y	△ 6.3A-UL/T-237, Secondary Fuse <AH>	Q704, Q705	2213284	2SC1740S-R
	252079	△ 6.3A-SE-EAK, Secondary Fuse <B1><C>	Q706	221282	DTC144ES
F912	252166Y	△ 6.3A-UL/T-237, Fuse <AH>	Q707	2213640	DTC123JS
	252079	△ 6.3A-SE-EAK, Fuse <B1><C>	Q708	2213510	DTA114ES
	Jacks			Diodes	
P301-P303	25045300	NPJ-6PDBL159	D701-D706	223205 or 223163	1SS270A or 1SS133
P304	25045303	NPJ-4PDBL162	D707,D708	224450562	MTZ5.6B
	Terminal		D709	224451303	MTZ13C
P501	25060125	NTM-8PDPMN058	D710-D715	223205 or 223163	1SS270A or 1SS133
	Plugs		D716,D717	225142	LED,SEL2913K
P201a	25055500	NPLG-12P475	L701-L703	233411K220	NCH-1387 220K
P601a	25055498	NPLG-8P473			
P602a	25055499	NPLG-10P474	X701	Resonator	CST8.38MTW, Ceramic
P603a	25055503	NPLG-18P478			
	Sockets			Capacitors	
JL401	25050531	NSCT-9P354	C701	3000074T	0.047F, 5.5V, Super
JL701a	25050612 or 25050705	NSCT-32P423 or NSCT-32P509	C702	375524744	0.47 μF ± 5%, 50V, Plastic
			C703	353721019 or 354721019	100 μF, 6.3V, Elect.
	Fuse holders		C704	353780109 or 354780109	1 μF, 50V, Elect.
F911a,F912a	25050065	YSH403T	C706	375524744	0.47 μF ± 5%, 50V, Plastic
	Heatsinks		C708-C710	353780109 or 354780109	1 μF, 50V, Elect.
	27160262	Q501,502	C717,C737	353721019 or 354721019	100 μF, 6.3V, Elect.
	27160209	RAD-67, Q921,923			
	27160271	RAD-083, D901	C748	353741009 or 354741009	10 μF, 16V, Elect.
CENTER SPEAKER TERMINAL PC BOARD (NAETC-4693)					
CIRCUIT NO.	PART NO.	DESCRIPTION			
P502	Terminal 25060114	NTM-2PDML048	R714	Resistor 49163103413	10kohm x 13, 1/10W, Array
REAR SPEAKER TERMINAL PC BOARD (NAETC-4694)					
CIRCUIT NO.	PART NO.	DESCRIPTION			
P503	Terminal 25060161	NTM-4PDML087	S701-S704	Switches 25035548	NPS-111-S510
HEADPHONE TERMINAL PC BOARD (NAETC-4695)			S706	25035548	NPS-111-S510
CIRCUIT NO.	PART NO.	DESCRIPTION	S708	25035548	NPS-111-S510
P504	Jack 25045255	YKB26-5009	S710-S728	25035548	NPS-111-S510
OUTPUT TERMINAL PC BOARD (NAETC-4696)			S731-S746	25035548	NPS-111-S510
CIRCUIT NO.	PART NO.	DESCRIPTION			
P432	Jack 25045302	NPJ-1PDBL161	JL701b	Socket 25050578 or 25050726	NSCT-32P389 or NSCT-32P530
DISPLAY CIRCUIT PC BOARD (NADIS-4697)			P702a	Plug 25055510	NPLG-3P485
CIRCUIT NO.	PART NO.	DESCRIPTION	U701a	Bracket 27141575Y	
U701	Remote control sensor 24130007	GP1U571X	Q703a	Holders 27190913	RS-412326
			D712a,D716a	27190843	

SURROUND CIRCUIT PC BOARD (NAAF-4698)			CIRCUIT NO.	PART NO.	DESCRIPTION
CIRCUIT NO.	PART NO.	DESCRIPTION	C653	374723924	3900pF \pm 5%, 50V, Plastic
ICs			C655	374726834	0.068 μ F \pm 5%, 50V, Plastic
Q451,Q471	22240247 or 22240293	BA15218N or NJM4558L-D	C656	354744709	47 μ F,16V,Elect.
Q499	22240239	TA7291S	C657,C658	353781099 or 354781099	0.1 μ F,50V, Elect.
Q601	22240247 or 22240293	BA15218N or NJM4558L-D	C659	374726834	0.068 μ F \pm 5%, 50V, Plastic
Q602	22240683 or 22240692	NJM2177L or M69032P	C660	374725624	5600pF \pm 5%, 50V, Plastic
Q605	22240247 or 22240293	BA15218N or NJM4558L-D	C661	374724724	4700pF \pm 5%, 50V, Plastic
Q651	22240686 or 22240687	M65830P or NJU9701D	C663,C665	354721019	100 μ F,6.3V, Elect.
Q671	22240266	TC9213P	C666	375524744	0.47 μ F \pm 5%, 50V, Plastic
Q673,Q674	22240247 or 22240293	BA15218N or NJM4558L-D	C671,C672	354780229	2.2 μ F,50V,Elect.
Q691	22240339	LC7823N	C675,C676	354761009	10 μ F,35V,Elect.
Q692	22240270	LC7822N	C677,C678	354780229	2.2 μ F,50V,Elect.
			C679,C680	354761009	10 μ F,35V, Elect.
			C681,C682	354780109	1 μ F,50V,Elect.
			C683,C684	374721034	0.01 μ F \pm 5%, 50V, Plastic
			C685,C686	354761009	10 μ F,35V,Elect.
			R450	Resistor 5144018	
Q491-Q495	Transistors 2213631T or 2213632T	RN1241-A or RN1241-B			N16RQL50KA25F, Variable, Volume
Q496-Q498	2213510	DTA114ES			
Q603,Q604	2213631T or 2213632T	RN1241-A or RN1241-B	P601	25050445	NSCT-8P269
Q675	2213631T or 2213632T	RN1241-A or RN1241-B	P602	25050446	NSCT-10P270
			P603	25050450	NSCT-18P274
			P611	2000802AUL	NSAS-6P758
D651,D652	Diodes 223205 or 223163	1SS270A or 1SS133	P621	Plug 25055411	NPLG-9P393
X651	Resonator 3010217Y	CST2.04MG040			STC SWITCH PC BOARD (NASW-4700)
L651	Coil 233411K220	NCH-1387			CIRCUIT NO. PART NO. DESCRIPTION
			S729	Switch 25035548	NPS-111-S510
			P702b	Socket 25050454	NSCT-3P278
C451,C452	Capacitors 354780229	2.2 μ F,50V, Elect.			TUNER CIRCUIT PC BOARD (NARF-4701)
C459-C462		10 μ F,35V, Elect.			CIRCUIT NO. PART NO. DESCRIPTION
C471,C472		2.2 μ F,50V, Elect.	TU001	Front end 240088	FE337-A07 <AH>
C479		10 μ F,35V, Elect.		240089	FE415-G11<B1><C>
C480-C482		10 μ F,35V, Elect.			
C491-C493		10 μ F,35V, Elect.			
C494		100 μ F,6.3V,Elect.			
C601,C602		10 μ F,35V,Elect.			
C605,C606		10 μ F,35V,Elect.			
C607-C610		0.1 μ F,50V, Elect.	Q104	22240039	ICs LA1266
			Q107	22240090	LM7001
C613,C614	354781099 or 354781099	473pF \pm 5%, 50V, Plastic	Q201	22240242	AN7470
C615,C616		223pF \pm 5%, 50V, Plastic	Q208	22240247 or 22240293	BA15218N or NJM4558L-D
C617-C620		0.1 μ F,50V,Elect.			
		354781099			
C621,C622	354780479	4.7 μ F,50V, Elect.			
C623-C627	353782299 or 354782299	0.22 μ F,50V,Elect.	Q101	2210746	Transistors 2SC945A-P <B1><C>
			Q102	2211723	2SC1923-O
C628	354761009	10 μ F,35V, Elect.	Q105	2212445	2SK365-GR
C629	354786899	0.68 μ F,50V,Elect.	Q106	2213284	2SC1740S-R
C630	354724734	0.047 μ F \pm 5%, 50V, Plastic	Q108,Q109	2213510	DTA114ES
C631	354725624	5600pF \pm 5%, 50V, Plastic	Q205,Q206	2212794	2SD1468-R
C632	354780229	2.2 μ F,50V, Elect.	Q207	2213510	DTA114ES
C634	354722219	220 μ F,6.3V, Elect.			
C635	354741019	100 μ F,16V,Elect.			
C636-C641	354761009	10 μ F,35V,Elect.	D103	224450512	Diodes MTZ5.1B
C642	354724724	4700pF \pm 5%, 50V, Plastic	D201,D202	223205 or 223163	1SS270A or 1SS133
C643	354761009	10 μ F,35V,Elect.			
C644	392841007	10 μ F,16V,Elect.	D206,D207	223205 or 223163	1SS270A or 1SS133
C647-C649	354761009	10 μ F,35V, Elect.			

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
	Transformers			Shield plate	
L101	233401	NFIF-4072	TU101a	27150346	<B1><C>
L102	233402	NFIF-4073			POWER SUPPLY CIRCUIT PC BOARD (NAPS-4702)
L152	232139	NMIF-4062			CIRCUIT NO. PART NO. DESCRIPTION
	Coils				
L103	233411M022	NCH-1375 022M		Transistors	
L104	233383	NMC-6070 <B1><C>	Q951	221282	DTC144ES
L151	232148	NMRF-7050	Q952	2213650	DTD113ZS
L201,L202	233355A	NMC-4059			
	Ceramic filters			Diodes	
X101	3010071	SFE10.7MA5	D951-D954	22380046 or	AM01Z or
X102	3010071	SFE10.7MA5 <B1><C>		22380035	GP104003E
X103	3010071	SFE10.7MA5 <AH>	D955-D957	223205 or	1SS270A or
	3010130	SFE10.7MZ2A <B1><C>		223163	1SS133
X151	3010123	SFZ-450JL			
X152	3010076	BFU-450C	T902	Transformer	
				2300670A	△ NPT-1111D, Sub Power <AH>
				2300671A	△ NPT-1111P, Sub Power <C>
X104	3010158 or 3010141	XTL-7.2M,Crystal		2300673A	△ NPT-1111Q, Sub Power<B1>
	Capacitors			Capacitors	
C001,C108	354741019	100 μ F, 16V, Elect.	C901	3500191	△ DE7150FZ103MAC400V/125V
C112	354780229	2.2 μ F, 50V, Elect.	C952	354742219	220 μ F,16V, Elect.
C113	354784799	0.47 μ F, 50V, Elect.			
C117	374723334	0.033 μ F \pm 5%, 50V, Plastic	R901	431523355	△ 3.3Mohm, 1/2W, Solid
C118	354780229	2.2 μ F, 50V, Elect.	R951	452530824F	△ 8.2ohm, 1/2W, Metal
C119	353782299	0.22 μ F,50V, Elect.			
C123	354721019	100 μ F, 6.3V, Elect.	F901	252166Y	△ 6.3A-UL/T-237, Primary Fuse <AH>
C124	354741019	100 μ F, 16V, Elect.	F902	252076 or	△ 3.15A-SE-EAK, Primary Fuse <B1><C>
C152	354721019	100 μ F, 6.3V, Elect.	F903	252075 or	△ 2.5A-SE-EAK,AC outlet Fuse <C>
C154	354780479	4.7 μ F, 50V, Elect.		252075CCY	
C155-C157	354761009	10 μ F,35V,Elect.			
C159	374724734	0.047 μ F \pm 5%, 50V, Plastic			
C160	374721034	0.01 μ F \pm 5%, 50V, Plastic			
C161	353782299	0.22 μ F, 50V, Elect.			
C201	354744719	470 μ F, 16V,Elect.	P902	AC outlet	
C202	354742209	22 μ F, 16V, Elect.		25050409	△ NSCT-4P234 <AH>
C205	353782299	0.22 μ F, 50V,Elect.		25050640	△ NSCT-4P451 <C>
C206	354780109	1 μ F, 50V, Elect.			
C207	354780339	3.3 μ F,50V, Elect.	RL901	Relay	△ NRL-1P15A-DC12-29
C208	370134714	470pF \pm 5%, 50V, Plastic			
C209	374724734	0.047 μ F \pm 5%, 50V, Plastic			
C211,C212	374721824	1800pF \pm 5%, 50V, Plastic	F901a	Fuse holders	△ YSH403T <AH>
	374721224	1200pF \pm 5%,50V, Plastic <B1><C>	F902a	25050065	△ YSH403T <B1><C>
			F903a	25050065	△ YSH403T <C>
C213,C214	354742209	22 μ F, 16V,Elec.			
C215,C216	354761009	10 μ F, 35V, Elect.			
C219,C220	374726824	6800pF \pm 5%, 50V, Plastic		Terminal	
	374724724	4700pF \pm 5%,50V, Plastic <B1><C>		25060092	NTM-1S33
C222	354780229	2.2 μ F, 50V,Elect.			
C223	374721024	1000pF \pm 5%, 50V, Plastic			REAR AMPLIFIER PC BOARD (NAAF-4703)
C224	374724734	0.047 μ F \pm 5%, 50V, Plastic		CIRCUIT NO. PART NO.	DESCRIPTION
C225,C226	354761009	10 μ F, 35V,Elect.			
	Trim resistors			ICs	
R101	5210266	N06HR100KBC	Q571,Q572	22240108	μ PC1225H
R201	5210261	N06HR5KBC			
R202	5210267	N06HR200KBC			
	Terminal			Transistors	
P101	25060160	NTM-4PDMN086 <AH>	Q562,Q563	2211732 or	2SC1845-F or
	25060117	NTM-2PDMN051 <B1><C>		2211733	2SC1845-E
				Q573,Q574	2SC1740S-R
				Q575,Q576	* 2SC4511-O or
				2202063 or	* 2SC4511-Y or
				2202064 or	* 2SC4511-P
				2202066	* 2SA1725-O or
				2202053 or	* 2SA1725-Y or
				2202054 or	* 2SA1725-P
P201	25050447	NSCT-12P271		2202056	

CIRCUIT NO.		PART NO.		DESCRIPTION		CIRCUIT NO.		PART NO.		DESCRIPTION	
Q579,Q580	2211732 or 2211733			2SC1845-F or 2SC1845-E		C251		Capacitors	354780229	2.2 μ F, 50V, Elect.	
L571,L572	231209s	Coils	S-0.4A			C252			354724719	470 μ F, 6.3V, Elect.	
C563	354721019	Capacitors		100 μ F, 6.3V, Elect.		C253			354780229	2.2 μ F, 50V, Elect.	
C571,C572	354761009			10 μ F, 35V, Elect.		C254			354724719	470 μ F, 6.3V, Elect.	
C577,C578	354721019			100 μ F, 6.3V, Elect.		C255			354780229	2.2 μ F, 50V, Elect.	
C585,C586	374723334			0.033 μ F \pm 5%, 50V, Plastic		C258			354724719	470 μ F, 6.3V, Elect.	
C587,C588	374724734			0.047 μ F \pm 5%, 50V, Plastic		C259			354721019	100 μ F, 6.3V, Elect.	
C595,C596	354761009			10 μ F, 35V, Elect.							
R585,R586	4000131	Resistors		0.22 ohm x2, 2W, Metal plate		P251		Terminals	25045339	NPJ-4PDYE190	
R587-R590	452530824			8.2 ohm, 1/2W, Metal		P252			25045395	NPJ-2PDYE221	
R597	452530824			8.2 ohm, 1/2W, Metal							
P611a	25055234	Plug	NPLG-3P218			JL251	25050529	Socket		NSCT-7P352	
JL571	25050280	Sockets	NSCT-3P108								
JL572	25050282		NSCT-5P110								
TONE CONTROL CIRCUIT PC BOARD (NAAF-4704)						NAD LINK CONVERTER CIRCUIT PC BOARD (NAETC-5056)					
CIRCUIT NO.		PART NO.		DESCRIPTION		CIRCUIT NO.		PART NO.		DESCRIPTION	
Q401,Q402	22240247 or 22240293	ICs	BA15218N or NJM4558L-D			Q761		ICs	22240808	TMS70CT40	
Q403-Q406	2211945	Transistors	2SK246-GR			Q762			22240809	TMS77C82	
D401-D404	223205 or 223163	Diodes	1SS270A or 1SS133			Q763,Q764		Transistors	2211455 or 2211455	2SA1015-GR	
C401,C402	354761009	Capacitors	10 μ F, 35V, Elect.			Q765-Q767			2213284	2SC1740S-R	
C405,C406	354744709		47 μ F, 16V, Elect.								
C407,C408	374721534		0.015 μ F \pm 5%, 50V, Plastic			D761-D764		Diodes	223205 or 223163	1SS270A or 1SS133	
C411,C412	374721534		0.015 μ F \pm 5%, 50V, Plastic								
C413-C416	374721044		0.01 μ F \pm 5%, 50V, Plastic			X761		Resonator	3010234Y	CST5.2MGW	
C417-C420	374721024		1000pF \pm 5%, 50V, Plastic			C761		Capacitors	354780109	1 μ F, 50V, Elect.	
R393	5104225	Resistors	N11RGLC 250KWT22Z, Balance			C764			375524744	0.047 μ F \pm 5%, 50V, Plastic	
R407,R413	5104230		N14RLC 100KWT22Z, Bass, Treble			JL703		Socket	25050531	NSCT-9P354	
VIDEO CIRCUIT PC BOARD (NAETC-4705)											
CIRCUIT NO.		PART NO.		DESCRIPTION		NAD LINK I/O CIRCUIT PC BOARD (NAETC-5057)					
Q251	IC 22240373	BA7625									
Q252-Q254	Transistors 2213354	2SA933S-R									
D251	Diodes 22380046 or 22380035	AM01Z or GP104003E									
NOTE: <AH>: U.S.A., Canadian model only : U.K. model only <B1>: Australian model only <C>: European model only											

PACKING VIEW

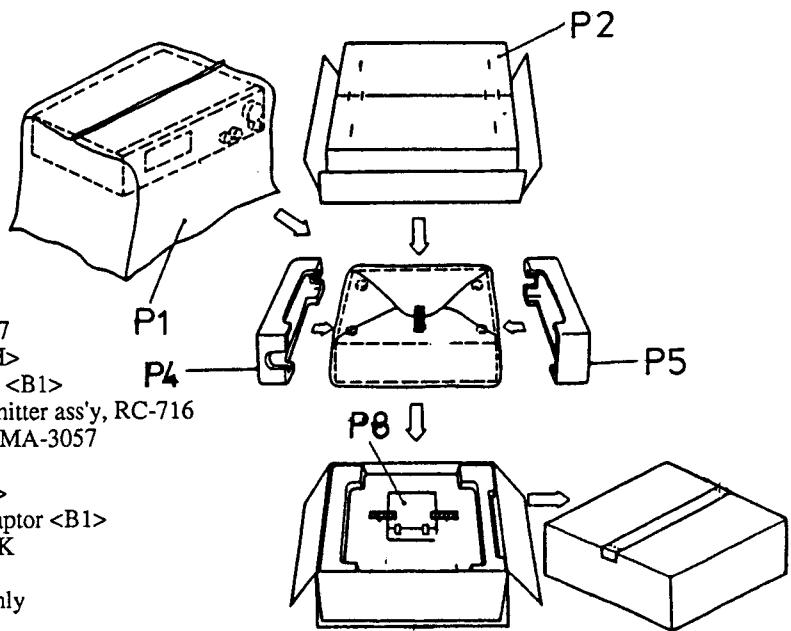
REF.NO.	PART NO.	DESCRIPTION
P1	29100034AY	Styren Bag 850x650
P2	29052790Y	Carton Box
P4	29091615BY	Pad (R)
P5	29091614BY	Pad (L)
P8	Accessory bag ass'y	
P8-1	29341983Y	Instruction manual, U7
P8-2	29355226Y	Instruction Sheet <AH>
P8-3	29365043Y	Warranty card (NAD) <B1>
P8-4	24140274	Remote control transmitter ass'y, RC-716
P8-5	232140	AM Loop antenna, NMA-3057
P8-6	292111Y	FM antenna
P8-7	292112	FM antenna <B1><C>
P8-8	25065462	YAE21-0237, FM adaptor <B1>
P8-9	2010317Y	Cord ass'y, NAD LINK

NOTE: <AH>: U.S.A., Canadian model only

: U.K. model only

<B1>: Australian model only

<C>: European model only



NOTES:

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